



EQUILIBRIUM[®]

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2010 ISSUE NO. 1

PAGES 3545 - 3572



Cover Picture

It is amazing what can be found for sale on Ebay. However, what is more interesting to some scale and weight collectors is the story behind those finds. Many times, research takes us on journeys to learn about the background, men and ideas behind a scale. It was such a journey that took on a life of its own with one of our authors in this issue.

After months of research spured on by a simple business card, found on ebay, Beare's Fulton's Gravity Scale article is complete. He has searched through scale collections from coast to coast to find every known example of this interesting pendulum scale. Read all the facts about the scales and all the people and companies involved in the manufacture of the Fulton's Gravity Scale on pages 3560-3572 in this issue. Barnett Collection.

Contents

Patent Warranted Correct and John Crane, Brass Founder - Update	
Michael Foster	3547
Letter to the Editor	
John Doran	3548
A Rare Corcoran Grain Scale	
Diana Crawford-Hitchins	3549-3552
Edward Whitfield and His Relations	
Norman Biggs	3553-3556
Review	
Diana Crawford-Hitchins	3557-3559
European Verification Marks	
Ludwig Ramacher	3559
Fulton's Gravity Scale, a Short-Lived Cincinnati Scale	
Steve Beare	3560-3572



EQUILIBRIUM is published quarterly in February, May, August and November.

© 2010 International Society of Antique Scale Collectors ISSN: 0893-2883

International Society of Antique Scale Collectors

Founded September 1976

Internal Revenue Service 501 (c) (3) EIN 36-2976410

3616 Noakes St., Los Angeles, CA 90023

Tel 323.263.6878 Fax 323.263.3147

www.isasc.org

Directors and Officers 2010*

President	Peter Laycock*
Vice Presidents	Bill James*
.....	Robert Jibben*
.....	Jerome Katz*
.....	Mary Anne Murphy*
.....	Shirley Schmidt*
Secretary	Carol Hayden*
Treasurer	Kurt Beyreis*
Executive Secretary	Jan Macho

For membership information contact

Shirley Schmidt sschmidt@vernet

5790 N. Lakeshore Rd. Palms, MI 48465

Published with the co-operation and support of

ISASC Europe

Founded October 1993

CHARITY COMMISSIONERS FOR ENGLAND & WALES No 1037558

www.isasce.com

Trustees and Officers 2009-2010*

Chairman	Norman Biggs*
Secretary	Thomas Allgeier*
Treasurer	Ken Govier*
Membership Secretary	Michael Robinson
Meeting Secretary	Janet Scarratt
European Representative	Jaap Visser
Publications Officer	David Apps
Information Officer	D Crawford-Hitchins
Trustee	Phil Holroyd*

For membership information contact

Michael Robinson, 18 Richmond Court,

Spital Walk, Boughton, Chester, CH3 5DA

Editor: Jan H. Berning. Tel 815.895.6328 Fax 815.895.6328 JHBerning@comcast.net

Associate Editor: Clifford Lushbough Tel 303.366.5471 cplush@comcast.net

Article submissions are preferred in MS Word with Times New Roman Font size 12.

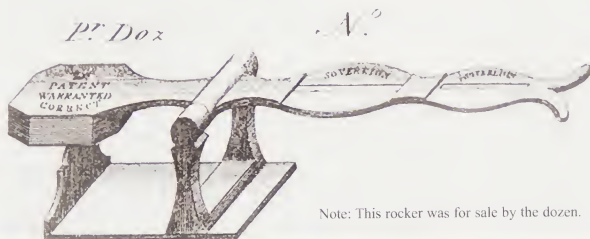
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

Patent Warranted Correct and John Crane, Brass Founder - Update

BY MICHAEL FOSTER

The author believes that most sovereign rockers without a 'Name', like the majority of the 'Patent Warranted Correct' series, were made for sale by Retailers and the only Maker identification used on the rocker was the Crown stamp. At the time that I was writing the article on "Patent Warranted Correct and John Crane, Brass Founder" several months ago there were no known Retailers of sovereign rockers with the Crane crown stamp.

This changed, in November, when Diana Crawford-Hitchins sent me an illustration of a sovereign rocker that she had discovered in an undated catalogue while doing research.



Note: This rocker was for sale by the dozen.

Photographs of a rocker of this type from my collection were included in my article, *Equilibrium* p.3526, Figure 9a & 9b and a new picture is added below, Figure 9c:

The illustration was found in the catalogue of Thomas Bourne Senior who operated his business at Broad Street,



Birmingham with known dates between 1830 and 1845. The text of the label on the Catalogue follows:

"Thomas Bourne Senr.

No 29, 30 & 31 Broad Street, Birmingham

Manufacturer of

Every description of Scales, Scale Beams, Steelyards,

Dog & Die Stocks, Screw Plates &c,

Patent & Improved Weighing Machines

Of all sorts to weigh from 1 oz to 5 tons.

Brass & Copper Kitchen Furniture, English & Foreign Weights."

This makes Thomas Bourne Senior a newly discovered Retailer of a 'Patent Warranted Correct' series sovereign rocker made by John Crane. Based on Thomas Bourne Senior's catalogue time frame of 1830-1845, this rocker was most likely made by John Crane when he was with 'Crane and Pattison', 1830-1840, or his follow-on company of 'Crane and Bach', 1840-1848 at 26 Cannon St, Birmingham.

Letter to the Editor

FROM JOHN DORAN

I am the curator of the Avery Historical Weighing Museum! I enjoyed reading the "Not For Weighing" article, it is very interesting

Firstly, the counting scale. Avery made a range of sizes of these counting scales; from small ones for use in the jewellers' trade and for light items like pen nibs etc; to big ones for use in an industrial environment. You would purchase a model to suit the weight of the items to be counted. (The big ones would not be sensitive enough for items like pen nibs. The counting range was 100-1 & 10-1, or 12-1 & 144-1 (dozens & grosses.) There were models with just a single quantity, i.e. 100-1, or 144-1 (only 1 small scoop). Also some models were calibrated in 99-1 and 143-1 so that you would add the items in the small scoop to the box along with the ones from the big (bulk) scoop to make up the full total.

Someone assembling weighbridges at the Avery factory would visit the stores (or more likely send the apprentice) for such things as: 200 of 3/4" (inch) x 4" Whitworth bolts, nuts and washers, to replenish his stock on his bench! The storekeeper would put 2 bolts in the small, 100 ratio, scoop, then tip bolts into the large scoop until the machine balanced; likewise with the nuts & washers.

You would also use the machine at stocktaking time to count the items in a bin: Put all the items into the large scoop, then place the same items, one at a time into the 100 ratio scoop; when the scale "balances" (say 17 items.) It means that there are LESS than 1700 items in the large scoop; you take 1 item out of the 100 scoop so that the scale returns to the under-weight position, leaving 16. You then put items into the small scoop until the machine balances (say 8.) If you have a few left in your hand (say 5) when the machine balances, then you add them to the total. In this example, 1685.

Counting machines were also used extensively in factories, to count operators output for piecework payment.

Avery had a hire division that hired out these counting scales to companies at stocktaking time.

The dynamometer is interesting; I have a picture in The Avery Museum, of a dynamometer attached to the back of a lorry in a field, and being used to pull up overhead electric power lines to a predetermined tension; hence the high capacity of the device!

In the days when steam ploughing was introduced, the steam engine was situated on the edge of a field; that is, the headland, (it was too heavy to actually be used on soft ground, to pull the plough behind it!) The plough was pulled backwards and forwards across the field by a wire rope attached to a drum on the engine. A dynamometer would be used to determine the loading on the wire rope for safety reasons. (The plough set too deep would result in excess load on the wire rope. If the wire snapped, it could flick a man's arm or head off instantly.)

There must have been many other uses, such as tensioning the support cables in bridge building, also bracing cables on tall masts, the overhead catenary wires on electrified railways etc, etc. The overhead power lines have to be accurately tensioned and shaped to prevent the pantograph on the train creating a "bow wave" effect as it travels along the wires at speed.



A Rare Corcoran Grain Scale

BY DIANA CRAWFORTH-HITCHINS

It all started with an email from Steve Beare, saying, "Look at ebay." So I did. There was a modern glass-fronted, dial-faced spring balance made by Bryan Corcoran & Co, a firm I was familiar with because they specialised in equipment for grain merchants. There were several people around the world enquiring of the seller about postal charges for such a heavy object, but I didn't have a spring balance for grain, so I put in a modest bid, thinking that I was very unlikely to get it with so much competition. But I was fortunate.

Then there was the problem of how to get a glass-faced balance from Bristol to Oxford. I don't trust the postal service when a heavy object has glass involved. I've seen cast-iron scales



Figure 1. ♣♣ What had Steve Beare spotted? Something quite modern, I thought.

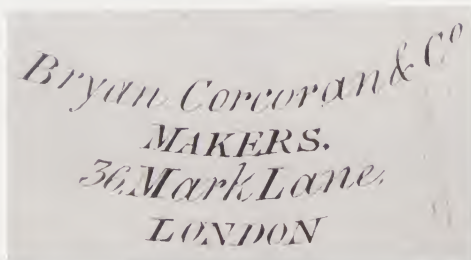


Figure 2. ♣♣ The Corcoran family were well-known for their chondrometers.



snapped in transit. What would they do to glass? But Ray, my husband, was way west of Bristol doing conservation work that week. If I could get a message to him maybe he could collect it. I was astonished when he understood approximately (in spite of a crackly 'phone line, and his deafness) and he put another conservationist on the line to get the details of what I wanted. He cycled miles up and down Bristol's steep hills, and had to confront the seller, who would not release the balance because the cheque was not yet cleared. After a phone consultation, Ray paid cash, and brought it home, with the seller promising to return the cheque.

To be honest, once I'd seen it, I wouldn't have cared if the cheque was not returned, it was such a handsome balance. All the parts were chunky (hence the high cost of postage), the dial was

Figure 3. ♣♣ The graduations were spaced 0-40 over half the circumference, and 40-110 over the other half. That did not suggest helical springs with their equidistant graduations.

Figure 4. *rr* The lyre spring is screwed to the top of the massive case. The flexure ribbon is attached to the curled ends of the lyre spring. The load is attached to the flexure ribbon.

A vertical narrow, straight spring (attached to the top of the load fixing) keeps the rack engaged with the pinion that turns the pointer.



Figure 5. *rrr* The quality of the workmanship is amazing. The large armature holding the pinion mechanism is carefully rivetted to an additional back plate. Each tooth of the rack is perfectly filed.

The hand-cut screws on the face are numbered with pips so that each screw is returned to its correct hole.



silvered, and eventually it dawned on me that the graduations were very widely spaced at the beginning, and got closer together as the load increased towards 112 lb. Nobody could call me observant!

The only dial-faced spring balances I have with such graduations are my two Siebe-Marriott's with an oval flexure spring, one single spring and one triple spring. Could this be a third one? How exciting! They are so rare! The Avery Museum seems to have a near-monopoly on them.

I had to wait until Andrew could bring his tools and his expertise. He unscrewed the tiny screws holding the brass rim and the glass face. He levered off the pointer, and unscrewed the three screws holding the silvered face. I was expecting him to rotate the face to release the bayonet-fittings, as on my Siebe's, but the face lifted up. We were both holding our breathe. What would we find?

Not an oval spring, a lyre spring. A LYRE spring? But they are as rare as hen's teeth, and the Avery Museum has the only one known. They do not turn up, so were assumed to be impossible to find. My subsequent email to Steve Beare must have read like gibberish, I was so incoherent with delight.

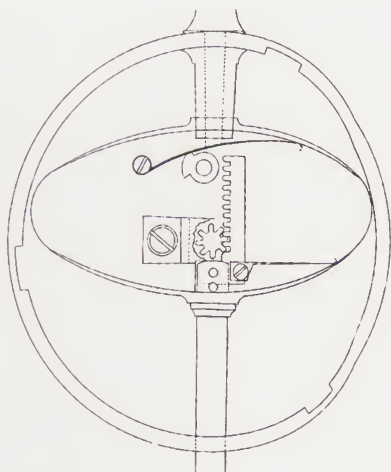
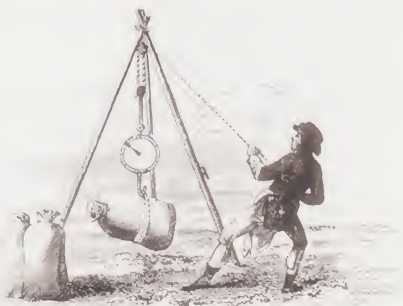


Figure 7. ➤ A Siebe's patent scale shown on Marriott's trade card, being used to weigh grain.

Figure 6. ⚡ Siebe's patent of 1819, showing the "spring or springs of an oval form, thick at the top and bottom, and gradually diminishing in substance towards the sides; or, instead of an oval form, the spring or springs may be bent in various shapes, so as that the effect of an endless spring be preserved (which is the leading principle of my invention)."

The box is truly circular, but has been distorted during the copying process.



*By His Majesty's Royal Letters-Patent.
This Weighing Machine for Accuracy, Simplicity & Portability
stands unrivalled, it instantaneously shows the exact Weight
of any Article on a Dial and thereby saves much time & labour.
It may be used in any situation and is perfectly portable;
its universal utility must be undeniable for Domestic purposes
Shops, Warehouses, Wharfs, Cans, Hay, Cattle, Tunn,
Market Houses, Coach Offices, &c. &c.*

Sold here by Appointment of
H. MARRIOTT, Patentee N° 64, Fleet Street LONDON.

Figure 8. ⚡ Siebe joined Marriott in partnership for a while, and then Marriott claimed Siebe's patent. This text forms part of Marriott's trade card, and specifically mentions its use as a corn scale.

The load hook is suspended from a flexure ribbon that is attached to the bottom ends of the lyre spring. When a light load pulls the steel ribbon down, the arms of the lyre spring move nearer together. When a heavier load is added, the arms of the lyre spring move less, and the ribbon barely moves down. This is why the graduations on the face get closer together.

The bar to the load loop has an extension at the top, forming a rack that is also pulled down by the load. The rack rotates the pinion that turns the pointer.

It is interesting that the graduations of both the oval and lyre spring balances were characterised by virtually the same feature, with the first 40 lbs covering the same distance as the next 70 lbs. This was an advantage for traders selling mostly light goods, even though the scales must have been much more expensive to buy than helical spring balances with their equally spaced graduations, perhaps one of the reasons for the rarity of Siebe's oval and lyre spring balances.

As the lyre spring balance in the Avery Museum is engraved with Siebe's name, I bought a copy of Siebe's patent of 1819, to see what he had to say about lyre springs. Nothing. Not a mention. Andrew drew my attention to Siebe's saying that he was specifically patenting a continuous spring. I said, "*But a lyre has an open bottom end*". Andrew said, "*A lyre with arms connected by a ribbon could be called, in engineering terms, continuous*". I was, and am, dubious about this definition of continuous, as I think that to be continuous, the spring must go right round to join the two ends together. But I am not an engineer, so must leave the argument to my betters. I shall just settle for my balance being made by Siebe for Bryan Corcoran sometime around 1819.

Bryan Corcoran Senior was initially, in 1780, a stationer and paperhanger at 39 Mark Lane. He must have had an entrepreneurial spirit, as he soon started to make the very fine wire meshes (called metallic cloth) needed to make paper. Bryan Corcoran Senior probably started making or selling conventional chondrometers before 1826. He was reacting to the customers of the Corn Exchange at 52-54 Mark Lane, who flooded past his shop door. As steelyard chondrometer design did not change for nearly 100 years, the only clue to an early date was his inclusion of a reference on his trade card to the Act of 1826. By the time he died in 1831, he was a stationer, mill-stone maker and wire worker, living at 36 Mark Lane.

His son, Bryan Corcoran Junior, continued the business with his grandson as Bryan Corcoran, Son & Co or (concurrently), as Bryan Corcoran & Co, still at 36 Mark Lane. The firm expanded into the manufacture of malt kilns for drying barley for beer-making, and supplied all necessities for buying and selling grain. They expanded into printing books, selling printers' inks and making paper, moving premises up and down Mark Lane intermittently.

So where does my grain scale fit into this story? I am convinced that Corcoran did not make this beautiful Siebe balance. He retailed it, having bought it from Siebe, not too long after Siebe patented his ideas in 1819.

But why was the scale made to weigh up to 112 lbs (1 cwt)? And why was there no tare for a bucket? And why was the lightest load graduated most accurately? Perhaps a sack was weighed first and noted down. Then the sack was filled (messy!) and weighed. The weight of the sack was deducted and the weight of the grain was then known. But why?

Could the scale have been just simply for weighing sacks of grain, as shown on Marriott's trade card? It seems far too smart to be made for such a repetitive job. It has been used very little. And how were the sacks attached to and detached from the scale quickly?

Is this a grain scale? Corcorans were involved in several other manufacturing processes. Did this scale have another function? I need an expert in grain weighing and selling to explain its use.

Acknowledgements

With thanks to Steve Beare and Andrew Crawforth.

Edward Whitfield and His Relations

BY NORMAN BIGGS

Edward Whitfield and Sons

A Birmingham directory¹ for 1818 contained an impressive advertisement for the firm of Edward Whitfield and Sons of Church Street (Figure 1). Among their many products were scales and weights of various kinds, but weights bearing the name of this firm are rare - the only one known to me is shown in Figure 2. This weight tells us clearly that it was made after the adoption of the Imperial Standards, and it also bears (very faintly) a mark reading GR IIII. Since the Imperial Standards were adopted in 1826 and George the Fourth died in 1830, the weight is dated as closely as we could wish. I have seen several weights with similar markings, but without the name, and it is probable that these are also products of the Whitfield firm.

It was a surprise to find how little was known about this firm, and even more of a surprise to uncover some of the facts outlined below. The implications of these discoveries for our picture of the scale-and-weight making trade in the first part of the 19th century are profound.

Edward Whitfield, the founder of the firm, married Hannah Balden in 1780, and together with Hannah's brother Joseph was a partner in the firm of Balden & Whitfield, listed in Pye's Directory of 1785. At that time they occupied the premises in Digbeth that had previously been occupied by Robert French, the scale



Figure 1. Edward Whitfield's advertisement 1818.

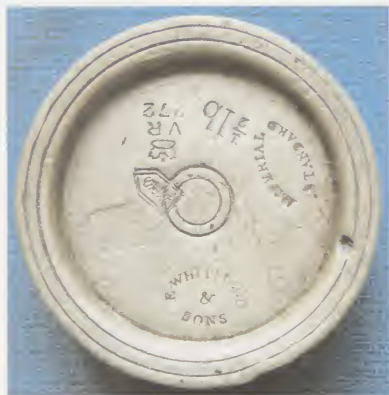


Figure 2. Brass weight with the name E. Whitfield & Sons.

maker who had trained the apprentice Thomas Beach from 1759 to 1766.

On the face of it, the Balden-Whitfield partnership was short-lived. Joseph Balden is recorded alone as a stillyard maker in Moat Row near the Bull Ring, from 1787 onwards, until he moved back to Digbeth, taking over Thomas Beach's premises in 1793/4. The earliest-known separate reference to Edward Whitfield as a scalemaker is in 1797, when he was in Spiceal Street. By 1800 he was in Church Street, where the firm remained for the next 50 years.



Figure 3. Sovereign rocker in wooden box, stamped WHITFIELD.

Edward and Hannah had several children, two of whom, Samuel (b.1781) and William (b.1784), took over their father's business when he died in 1806. It seems that both were talented young men, for they were granted five patents² in the period 1809-26. Under their management the firm continued to prosper, and became one of the most important in Birmingham, making the range of metal goods described in the advertisement shown in Figure 1. They were one of the many firms that made 'rocker' balances for checking gold sovereigns - their version was a rather superior one, cased in a wooden box and supplied with grain weights (Figure 3).

In 1834 Samuel Whitfield's eldest son Edward was one of the persons appointed as inspectors of weights and measures for the county of Warwickshire³; most of the inspectors were scalemakers and, not surprisingly they were soon to be replaced by more disinterested persons. After the death of William Whitfield in 1834 the firm was divided. Two of Samuel's sons, Edward and John, took over the general side of the business, trading in Lichfield Street, and two of William's sons, Thomas Dutton and Henry, took over the scale-making side, trading as T&H. Whitfield. An iron weight bearing this form of the name is shown in Figure 4, and their advertisement from an 1843 Directory⁴ is shown in Figure 5.

Subsequently the Whitfield family seems to have gradually retired from active business. Henry Whitfield died young in 1844, and in Slater's Directory for 1852/3, Thomas D. Whitfield is listed as a scale beam maker at 15 Church Street. But he died in 1854, in the Isle of Wight. The other branch of the firm was listed in 1852/3 as E&J. Whitfield and S. Mee, at 16 Church

Figure 4. Iron weight with name T & H Whitfield.





Figure 5. T & H Whitfield's advertisement 1843.

Street. By 1858 (Dix's Directory), 16 Church Street was occupied by Whitfield and Wilson, scale beam manufacturers, and 15 Church Street was occupied by the apparently unrelated firm of William Pipe.

Avery, Balden, Beach and Whitfield

The marriage of Hannah Balden and Edward Whitfield in 1780 is only the tip of an iceberg. There were several other marriages involving members of these families and the families of Avery and Beach. In 1785 Hannah Avery and Mary Avery, daughters of John Avery and Mary Beach, married (respectively) Samuel Balden and Joseph Balden, brothers of the Hannah Balden who had married Edward Whitfield in 1780.

This Joseph Balden was surely the scale-maker in Digbeth, who died on 5 June 1813. Less than two months later, on 20 August 1813, his daughter Mary Ann married Edward, one of the younger sons of Edward Whitfield and Hannah Balden. Mary Ann's sister Elizabeth had married William Avery (grandson of John Avery and Mary Beach) in 1811. The family tree is shown in Figure 6.

Given the existing linkages between the families, it is hardly surprising that the 1813 marriage was the subject of a complex settlement. The details of this settlement are not clear, but there are extant papers deriving from it dated as late as 1870. One point of particular interest is the possibility that it resulted in the Beach-Balden scale-making business in Digbeth being effectively in the hands of William Avery from 1813 onwards. The traditional story is that Joseph Balden's eldest son ran the business for a few years, before Avery took control by means of a deed executed in 1817. However, it seems that this deed refers only to the Balden estate in general. It does not mention the scale-making business explicitly, possibly because it was already under William Avery's control as a trustee of the marriage settlement.

The link between the Whitfield firm and that of W & T. Avery also raises a number of questions. It appears that the Whitfields were dominant in the period c1815-1830, but gradually gave way to the Averys. (It should be noted that there were other important scale-making firms in Birmingham at this time, such as that founded by Thomas Bourne in 1788.) Could it be that the Averys, Baldens and Whitfields always worked closely together, possibly under the aegis of Thomas Beach, so that in fact the 'family business' was a consortium of several firms?

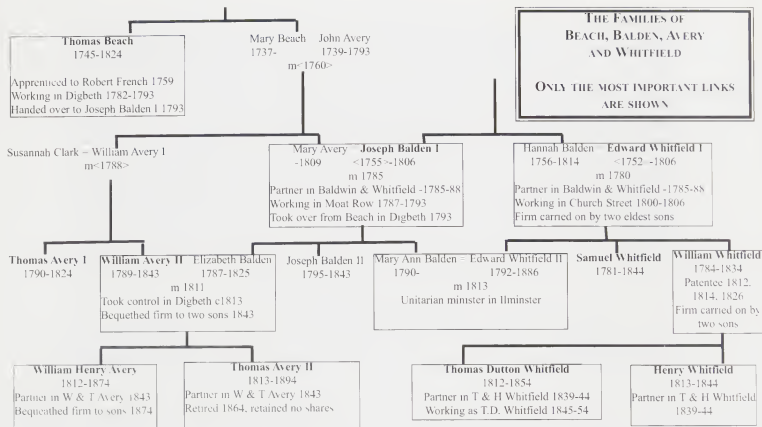


Figure 6. A

History: written, unwritten, rewritten?

Why it is so difficult to sort out the development of the scale trade in Birmingham? One reason must be the subsequent desire of Avery's to dominate the trade. In the first half of the twentieth century, rewriting history was only one of the weapons they used in pursuit of this objective. L. H. Broadbent, the firm's official 'historian', was clearly embarrassed by the need to reconcile the firm's claims with historical data. The statement that the firm was 'established in 1730' was a case in point. Some of Broadbent's polite obfuscations were unravelled by B.D.M. Smith in her monumental work⁶, but even she did not follow up the Whitfield connection. In general, there must have been many links between businesses that were not apparent to the outsider, because they were based on inheritance through the female line. The high incidence of marriage between cousins was not unusual in an era when the opportunities for meeting prospective spouses were limited. Furthermore, in the commercial world of the time, it likely is that many marriages were made in the counting-house, rather than in heaven.

For those who would like another thread to untangle, there is the fact that the Whitfields became Unitarians in the late eighteenth century. Indeed, the Edward who married Mary Ann Balden in 1813 became a Unitarian minister in Ilminster, Somerset, where he died in 1886 at the age of 94.

References:

1. *Wrightson's New Triennial Directory of Birmingham* 1818 (reprinted by Frank Graham, Newcastle 1969).
2. R.B. Prosser, *Birmingham Inventors and Inventions*. Birmingham 1881 (reprinted by S.R. Publishers, Birmingham 1970).
3. *A Return of all Inspectors of Weights and Measures* London 1835.
4. *Directory of Birmingham ...* Wrightson and Webb. Birmingham [1843].
5. L.H. Broadbent, *The Avery Business* (1730-1918). Avery, Birmingham 1940.
6. B.D.M. Smith, *The Avery Weigh: A History of W & T Avery Ltd 1730-1939*. Unpublished typescript 1967, available in Birmingham Central Library.

Review

John Sheldon, Toymaker, Pencil Maker, & Silversmith, a Birmingham Master of Manufacturing and Innovation by Brian George, pub. The Pen & Pencil Gallery in Penrith, ISBN 978-0-9562711-0-5. Available from the author, 32 The Ridings, Epsom, Surrey, KT18 5JJ, UK at the price of £10, plus postage & packing of £1 in the UK, £2 to Europe and £3 to USA. Payment via Paypal to <george@bands232.fsnet.co.uk>, or as a cheque made out to B George.

This booklet contains a mass of information about Sheldon and Birmingham. I bought it to learn about Sheldon's ten compendiums that each included a letter balance, but I learned a lot about his other products and about his environment.

Brian tells us in his preface that he and his wife concentrated on studying Sheldon for 15 years, which explains the impressive range of material, including 37 excellent photographs and prints of the parts of Birmingham where Sheldon lived and of the Sheldon family. He includes 28 trade labels, advertisements and registered designs, and emphasises that Sheldon advertised in, or was written about, in dozens of Directories, newspapers, and exhibition catalogues.

Figure 2. ♣♣ One of the pictures in the book on Sheldon, shown larger in EQM format, so that the reader can appreciate the delicate engraving on the silver.



Figure 1. ♣♣ A Sheldon pencil shown full size, with the spring balance unfolded. These charming compendiums were made in several variations, each explained in George's book.





Figure 3. ▲ One of the condensed kits available from Sheldon, called *Escritoires*. They must have made the perfect Christmas present, but were such tiny pieces useful? The spring balance and pen was useful, but how about the tiny tape measure? Or the candle? Or the little stamp box? Or the minute ink bottle?

Brian includes 113 photographs of Sheldon's products. As all the illustrations, and all the text has to be packed into the equivalent of a *Shire* Booklet, it is obvious that each illustration is very small, but the quality of each is so good that, with a lens, every detail can be either read (on adverts) or seen (on engraved objects). A great deal can be learned without even reading the text, so the booklet would be useful for non-English-speaking readers.

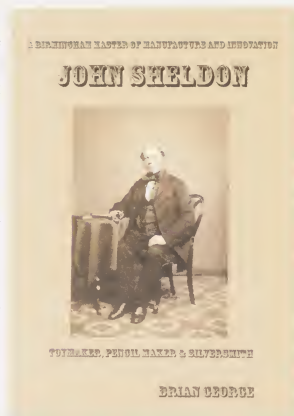
Of course, the text is well-worth reading too, as Brian has included chapters on Sheldon's locations, on industry, on religion's influences, and on public life in Birmingham as they relate to Sheldon. Brian's readers would have appreciated an extra chapter on the competitiveness of Sheldon's products. Sheldon was in direct competition with S Mordan, and in near competition with the makers of shelf-edge scales such as Henry Hooper, Walker's (*Compactum*), Thornhill and the Greaves family, etc. Was it the delightful fancy finishes that gave Sheldon his leading place? Was it the relatively low price? Were the spring balances easier to use than the shelf-edge scales?

Brian analyses the variations of letter balances that Sheldon produced. The first Design Registration he obtained was for a moving load scale in the end of a pen/pencil compendium. Brian does not point out that, if the user failed to fully retract the pen, the pencil and the gauge, (that acted as the poise) then the scale read incorrectly. Sheldon very sensibly moved over to putting tiny spring balances in the end, that were unaffected by careless users.

Brian gives full details of the various graduations put on each type, showing the ambitious range of countries targeted. Brian does not pick up on Sheldon's use of the term "East Indies" (in his advert on page 18, top left.), that might confuse modern readers. The Dutch ruled large parts of the East Indies, and Sheldon's scales would have been useless there. However, the British ruled large parts of India, having taken over from The East India Co. The Colonial servants sent out to India did use Sheldon's scales in considerable numbers. Four variations are shown on the bottom of page 44.

Examining the four variations leads to another fascinating query. Why are the prices so different? They range from 1 Anna for sending a letter weighing 1 Tola, to 2 Annas, to 1 Rupee (16 Annas). That is an amazing alteration in cost. Was it because prices varied according to which Indian City was the beginning of the letter's journey to Great Britain? Was it because the Indian Post Office wanted a greater profit? Was it because the value of the silver currency dipped catastrophically when huge deposits of silver flooded the world market when silver was discovered in the US? There is room here for a supplement to Brian's booklet.

Have you got the impression that this booklet is extremely interesting? I hope you have. Brian is to be congratulated on producing an impressive study with a huge range of facts, all compressed into an attractive but cheap booklet. I recommend that you buy it and enjoy it. .DIANA CRAWFORTH-HITCHINS



European Verification Marks

New edition of *Europäische Eichzeichen* in preparation.

Verification marks are one of the best tools to identify the origin and age of scales and weights.

Gregor Linkenheil, a German collector living in Luxemburg, has been collecting verification marks now for about 20 years with the help of some friends, and has printed them in *Europäische Eichzeichen*.

The new edition (EEZ 11) will include about 8,500 of them from all European countries. Countries like Spain, Italy, UK and Russia especially will be even more broadly represented than before, as research has been eased a lot by modern tools of communication.

Although the texts are in German, it will also be a useful tool for collectors unable to read German, as the marks are all represented by drawings, and the headings are easy to understand. EEZ is organised country by country and if historically relevant (e.g. Germany, Italy and Spain), also by the former states.

There will be a (non profit) printed version at 30-40 € plus shipping and a CD version at 10 € incl. shipping. The printed version will be only available by order beforehand.

If you are interested please contact Gregor Linkenheil via cglink@pt.lu to order it, or send a short letter . (Gregor Linkenheil, 7, Rue J.P. Kommès, L-6988 HOSTERT / Luxembourg). LUDWIG RAMACHER

Fulton's Gravity Scale, a Short-Lived Cincinnati Scale

BY STEVE BEARE

One of the greatest pleasures of eBay is finding something new to study and learn about. I recently saw a trade card for Fulton's Gravity Scales, and I was not familiar with this company or scale (Figure 1). I forwarded the auction listing to Jan Berning, as it reminded me (incorrectly) of a scale I thought she had written about. She informed me that no article had been written on Fulton's Gravity Scale, as the patent had not yet turned up. This was all I needed to hear, and I immediately bought the trade card on a "Buy It Now" bid.



Figure 1. ♣ ♣ Fulton's Gravity Scale trade card, 1881-1882. Beare collection.



Figure 2a. ♣ ♣ 25 lb Fulton's Gravity Scale, restored. Murphy collection. Photograph by Jan Berning.



I searched in vain for a patent by a scale inventor named Fulton. I then searched eBay auctions and found pictures of a rusted example of a 25 lb Fulton Gravity Scale which had recently sold, and which has since been restored (Figure 2a). The scale has a brass plaque with the patent date of March 16, 1880 (Figure 2b). With this new information, I was able to quickly locate patent number 225,513, Pendulum Scale, by plugging the patent date and the word scale into a Google Patent search (Figure 3). What came as a complete surprise was that the inventor was not a Fulton from Cincinnati, Ohio, but Platt Evens, Jr., from Covington, Kentucky. What Evens claimed over other pendulum scales was a bent weighted lever L and a finger, or hand H in combination with an adjustable pointer T on the lower end of the hand (Figure 3). This allowed one to tare the weight of an object, for example an empty bottle, and then find a weight difference after filling. In fact, none of the Fulton's Gravity Scales uses this tare feature, which is the basis of the patent. This is not the first time a patent date has appeared on a scale as a marketing tool in order to scare off competition. Evens referred to the pendulum scale as a gravity scale, and this name stuck. Further research showed that Mr. Evens was a serious and prolific inventor of a number of useful inventions between 1853 and 1890. His best known invention was an ornate 1853 seal press, used to emboss letters and envelopes. He advertised that he manufactured and sold these seal presses, and also engraved the dies used in them.

Figure 2b. ♣ ♣ 25 lb Fulton's Gravity Scale, brass maker's mark, restored. Murphy collection. Photograph by Jan Berning

P. EVENS, Jr.
Pendulum-Scale.

No. 225,513.

Patented Mar. 16, 1880.

Fig. 1.

Fig. 2.

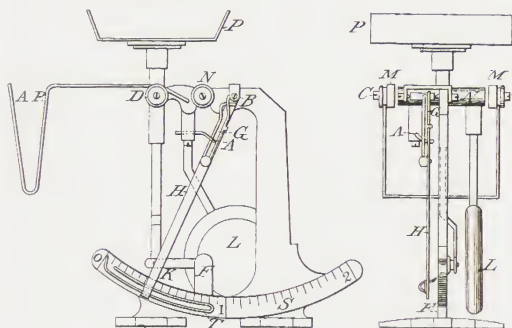


Figure 3. // Pendulum scale, U. S. Patent No. 225,513, issued March 16, 1880 to Platt Evens, Jr.

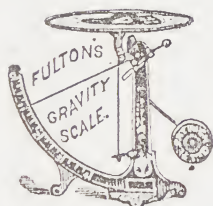


Figure 5a. // Fulton's Gravity scale ad Oct 12, 1881 Cincinnati Daily Gazette.

Fulton R. M. & Co.

without springs
or adjustable
weights, for Of-
fice, Family and
general use, 161
Central Av

machinery, and fine jobbing, promptly attended to.
Orders received with designs by mail, post-paid.

Figure 4. // Fulton's Gravity scale ad June 1881 Cincinnati City Directory.

Figure 5b. // Fulton's Gravity scale ad Oct 15, 1881 Cincinnati Daily Gazette.

GRAVITY SCALES.

No Springs.

IT WILL PAY YOU



To throw away your old scales and adopt the popular Fulton's Gravity Scale, which is steadily gaining a reputation for practicability. Owing to its construction it is pronounced by highest authority both a time and money saver. We recommend its use in every counting room, postoffice, household, and store, and insure its accuracy and durability. Thousands now using them. Descriptive circular sent to any address. Manufactured by

R. M. FULTON & CO.,

161 Central Avenue, Cincinnati.

SO AGENTS AND CANVASSERS WANTED.

nc12-2tWS8p

GRAVITY SCALES.

IT WILL PAY YOU

No Springs.



To throw away your old scales and adopt the popular Fulton's Gravity Scale, which is steadily gaining a reputation for practicability. Owing to its construction it is pronounced by highest authority both a TIME and MONEY saver. We recommend its use in every Counting-room, Postoffice, Household, and Store, and insure its accuracy and durability. Written indorsements from thousands now using them. Descriptive circular sent to any address. Manufactured by

R. M. FULTON & CO.,

161 Central Avenue, Cincinnati.

SO AGENTS AND CANVASSERS WANTED.

oc12-2tWS8p

Fulton's Gravity Scales.

Advantages Over Other Scales.

1. RAPIDITY—Weighing in one-third of the time required on any other scale.
2. SIMPLICITY—Adjustment of slides, weights and springs is entirely dispensed with, making it light, compact and readily understood at sight.
3. ABSOLUTE ACCURACY—A feature long required, and found in no other; determining the exact amount or box's weight of an article.

Directions.

Set the Scale in a level place; when level, the indicator will point to the first line on the dial; it is then ready for weighing.

Lay all articles on the pan or scoop carefully, avoiding unnecessary vibrations of the pendulum.

Avoid handling the indicator.

Should the parts work a little stiff, use machine oil.

THE FOLLOWING PARTIES are using our Scales, and may be addressed or called upon for reference:

CINCINNATI POST OFFICE.

W. CUSHING & CO., Perfection Dyes, Provoct, Mo.

SECRETARY OF STATE, Springfield, Ill.

SCOTT & CURTIS, Drugs, Livermore, Cal.

SEDOGWICK BROS., Wire Fence Mfrs., Richmond, Ind.

HEADSTREET'S AGENCY, Cincinnati.

M. HALSTEAD & CO., Pub. Cincinnati Commercial.

GOUGH FREEZER CO., Cincinnati.

DANIEL STONE & CO., Coal, Cincinnati.

J. D. WELLS, Drugs, Cincinnati.

JOHN HOLLAND, Gold Pens, Cincinnati.

ILLUSTRATED PRICE-LIST

—OF—

FULTON'S GRAVITY SCALES

AN IMPROVEMENT OVER ALL KNOWN
MEANS OF WEIGHING.



No Springs! No Slides!! No Weights!!!

SPECIAL DISCOUNT TO DEALERS.

FOR SALE BY

F. M. VAN ETEN,
MANUFACTURERS' AGENT,

78 and 80 Lake Street,
CHICAGO, ILL.

Gentlemen and Lady canvassers wanted for City and Country.

CALL AND SEE THE SCALE.

Figures 6a.  Illustrated Price-List. Fulton's Gravity Scales. 1881-1882. Beare collection, front & rear.

By the 1860 census for Covington, Kentucky census, Evens was married, with three children aged one to six, had one servant, and listed his occupation as Machinist. In 1870 he listed his occupation as Seal Engraver, and in the 1880 census, he listed himself as a Maker of Seal Presses, but with no mention of being a scale maker. In the 1900 census he was recorded as widowed but he was still working as a Model Maker at age 72. Evens commuted across the Ohio River by ferry until the completion of the first Cincinnati-Covington bridge in 1867, an historic suspension bridge by John Roebling that still sees great use. Roebling later designed and built the Brooklyn Bridge on the same principle.

Other than the 1880 pendulum scale patent, I could not find any connection between Evens and the Fulton Gravity Scale until much later, when I had access to Cincinnati city directories. Another app-roach was needed to ferret out Mr. Fulton, if there was any such family name. Perhaps it was the name of a county, or a reference to Robert Fulton, proclaimed inventor of the steamboat, used heavily on the near-by Ohio River.

Fulton's Gravity Scales.

TEA AND TOBACCO SCALES.



No.	Capacity.	Plain.	Nickel Plated.
0	1/2 oz. to 8 oz. Tin Scoop.	\$2.75	\$8.25
1	1/4 oz. to 2 lbs. "	3.25	8.75
2	1 oz. to 4 lbs. "	4.50	9.50
3	1/2 oz. to 8 oz. Brass Scoop.	8.25	9.75
4	1/4 oz. to 2 lbs. "	8.75	4.25
5	1 oz. to 4 lbs. "	5.50	8.50

Particularly adapted to weighing Tea, Spices, Tobacco, Seeds, etc., etc.

DRUGGISTS' SCALES.

Combined Platform Top and Brass Scoop.



No.	Capacity.	Plain.	Nickel Plated.
0	1/4 oz. to 8 oz. Top and Scoop.	\$3.50	11.50
1	1/2 oz. to 2 lbs. "	4.00	8.00
2	1 oz. to 4 lbs. "	6.50	7.00
3	1 oz. to 10 lbs. "	8.50	8.50

Apothecaries, Chemists, Photographers, Dentists, and Jewelers, pronounce these Scales superior to any thing ever devised.

Fulton's Gravity Scales.

FAMILY & COUNTER SCALES.



No.	Capacity.	Plain.	Nickel Plated.
2	1 oz. to 1 lb. Platform Top	\$4.00	\$5.00
3	1 oz. to 10 lbs. "	3.00	6.00
4	1 oz. to 4 lbs. Tin Scoop.	4.50	5.50
5	1 oz. to 10 lbs. "	5.50	6.50
6	1 oz. to 4 lbs. Brass Scoop.	3.50	4.50
7	1 oz. to 10 lbs. "	6.50	7.50

Indispensable to Housekeepers, Grocers, Bakers, and Confectioners.

BUTTER AND MEAT SCALES.



No.	Capacity.	Plain.	Nickel Plated.
2	1 oz. to 4 lbs. Platform Top	\$4.00	\$5.00
3	1 oz. to 10 lbs. "	5.00	6.00

These Scales are in constant use, and are remarkably convenient for market weighing.

Figures 6b.  Illustrated Price-List. Fulton's Gravity Scales. 1881-1882. inner pages. Beare collection.



Figure 7a. // 25 lb Fulton's Gravity Scale, Pugsley collection. Photograph by Jan Berning.

aged one (Robert) to eight. By the 1870 census both parents had died, and the now six orphaned children were in the care of their deceased mother's widowed sister in Ripley, Ohio⁴.

By the time the Cincinnati directory was published in June 1877, Robert M. Fulton had left home and at age 18 was a clerk in Cincinnati. In the 1880 Cincinnati census, Fulton was listed as a Clerk in a Paper Store (a stationers). Based on the address, that store was Pounsford, a long-established wholesale bookseller, stationer, printer, and blank book manufacturer. While in Cincinnati, young Fulton met his future wife, Emmie Gooch, the daughter of inventor and entrepreneur Charles Gooch. Gooch's most profitable inventions were ice cream freezers, for which he had several patents issued between 1868 and 1894, and for which he established the Gooch Freezer Company in 1874. Gooch also advertised that he would purchase patent rights. Gooch, rather than Fulton, likely purchased the rights for Evens' pendulum scale.

Robert married Emmie on January 7, 1881 at the home of the Gooches. The wedding party was reported in great detail in the local newspapers⁵. Fulton was described as "a gentleman connected with the stationary firm of Pounsford & Co.," perhaps a bit inflated for a 21-year old clerk.

After numerous iterative searches of contemporary on-line books, newspapers and census records, and analysis of several pieces of undated ephemera, a picture slowly began to form and then reform in several different shapes out of the fog. The Fulton Gravity Scale Company came on the scene by the middle of 1881 to manufacture and market this scale around the country, with sales through agents and retail outlets such as stationary, photographic supply, and hardware stores. The product was well manufactured and advertised, and several models were quickly added. However, in 1888, the business failed. This was due to a combination of inexperienced management and a product that was probably too expensive to produce compared to more cheaply made scales which did an acceptable job.

Here is at least some of the story, which has been my most challenging (i. e. most enjoyable) scale research so far. With every new piece of ephemera or primary historical information, I have had to thoroughly reevaluate my conclusions to fit the existing evidence. It is hoped that this article will bring out yet additional information.

Robert M. Fulton was born in Cincinnati in March 1859 to a successful commission merchant, John Fulton. The 1860 Cincinnati census reported that John Fulton had five children

Figure 7b. // 25 lb Fulton's Gravity Scale, detail, Pugsley collection. Photograph by Jan Berning.





Figure 8a. ∞ Fulton's Gravity Scale trade card, 1884-1886, AAS collection, front.



Figure 8b. ∞ Fulton's Gravity Scale trade card, 1884-1886, AAS collection, rear.

Gooch wasted no time in helping his son-in-law. When the next city directory was published in June, 1881, there was a listing for R. M. Fulton & Co. at 161 Central avenue, the same address as on the trade card that started this adventure. Fulton was also still listed as a salesman at the Pounsford stationer's address, which showed that he was working two jobs. The R. M. Fulton & Co. listing was accompanied by a small illustration of a

4 lb Fulton's Gravity Scale *without springs or adjustable weights, for Office, Family, and general use.* This is the earliest advertisement I have been able to locate, and it shows a crudely drawn version of the scale without the ornamental cast iron vertical attachment (Figure 4).

The first Fulton's Gravity Scale newspaper ad soon appeared on Oct 12, 1881, in the Cincinnati Daily Gazette with bold claims:

GRAVITY SCALES

No springs No weights

IT WILL PAY YOU To throw away your old scales and adopt the popular Fulton's Gravity Scale, which is steadily gaining a reputation for practicability. Owing to its construction it is pronounced by highest authority both a time and money saver. We recommend its use in every counting room, postoffice, household, and store, and insure its accuracy and durability. Thousands now using them. Descriptive circular sent to any address. Manufactured by R. M. FULTON & CO., 161 Central Avenue, Cincinnati. Agents and Canvassers Wanted. (Figure 5a)

Figure 9. ∞ 8 oz Fulton's Gravity Scale, Doniger collection. Photograph by Bill James.



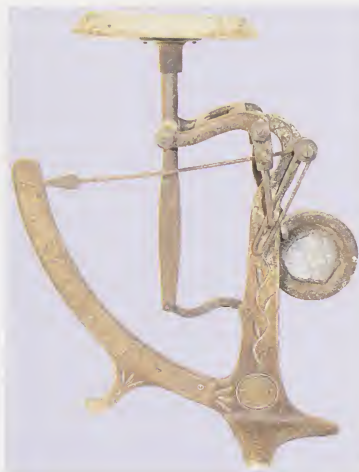


Figure 10a. ▲ ▲ 8 oz Fulton's Gravity Scale, Beare collection.

The positioning as a postal scale was aimed at the huge postal market. This ad ran eight times. Apparently needing more capital, on May 22, 1882, the following ad appeared in the *Cincinnati Commercial Tribune*:
Notice is hereby given that a book for subscriptions to the capital stock of Fulton Gravity Scale Company will be opened up on Saturday, June 24, 1882 between the hours of 10 o'clock AM and 2 o'clock PM, at the office of the company, No. 161 Central Avenue, Cincinnati, O. By order of the incorporators.

Shortly after this, on June 3, 1882, an ad appeared in the *Cincinnati Commercial Tribune*:

Notice is hereby given that the books of the Gooch Freezer Company will be open for subscription to the capital stock, on Wednesday July 5, 1882, at the office of Charles Gooch 109 Sycamore st., Cincinnati, O. Charles Gooch, Gazzam Gano, Geo. D. Winchell, Theodore Kraft, Robt. M. Fulton, Incorporators.

Gano was president of the Amazon Insurance Company, Kraft was Superintendent of the Gooch Freezer Company and an attendee of the Fulton/Gooch wedding, and Winchell was president of the Winchell Manufacturing Company, a large manu-

The illustration now shows the correct vertical link between the platform and the pendulum. This ad ran only twice, on October 12 and 15. The type was completely reset for the October 15 insertion. In addition to minor changes in capitalization, there was a change in text, from *Thousands now using them* to *Written endorsements from thousands now using them* (Figure 5b). The ad obviously contains puffery, and thousands had not yet likely been sold at such an early date. However, its advertised features and benefits over other scales are reasonably accurate. The ad copy undoubtedly had the experienced hand of Charles Gooch, who had heavily advertised and promoted his ice cream freezers for seventeen years. The plea for Agents and Canvassers was a sales technique commonly used to quickly market new products to the rapidly expanding country.

On February 25, 1882, a second, more restrained ad appeared in the *Cincinnati Commercial Tribune*:

For rapid and correct weighing, Buy Fulton's Gravity scales. Office, Family, and Counter Sizes, Universally Indorsed [sic] Needed in every Post-Office.

Liberal Discount to the Trade. R. M. Fulton & Co. 161 Cent. Avenue, Cincinnati, O.

Figure 10b. ▼ ▼ 8 oz Fulton's Gravity Scale, rivet detail and maker's mark, front, Beare collection.



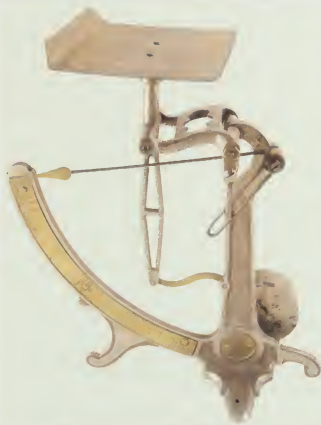


Figure 11. 2 lb Fulton's Gravity Scale, Barnett collection. Photograph by Jan Berning.

facturer of tinned and sheet iron wares, and most likely had a hand in the manufacture of Gooch's ice cream freezers. Robert M. Fulton is listed as an incorporator in the Gooch Freezer Company, although no names were shown for the incorporators of the Fulton Gravity Scale Company. We will learn these later.

To help promote the new scale company, a short article likely written by Fulton or Gooch appeared in the *Cincinnati Commercial Tribune* on July 15, 1882:

The enterprise of Cincinnati manufacturers is frequently shown by orders from other lands for goods. The Fulton Gravity Scale Company have just received an order from Chios, Sinaloa, Mexico, for some of their scales. Accompanying the order was a bag of gold dust, sent in payment.

Additional ads continued throughout 1882. The following ad ran four times in the *Cincinnati Commercial Tribune*, beginning September 27, 1882:

Rapid and Correct. No springs or weights. Fulton's Gravity Scales. For Office Family and Counter Use. Illustrated Price-list sent to any address. For sale by all Hardware Dealers and Stationers. Address The Fulton Gravity Scale Co., 161 Central Av. Cincinnati, O.

A new ad ran four times in the *Cincinnati Commercial Tribune*, beginning November 26, 1882:

*Fulton's Gravity Scales.
Unsurpassed for Office, Family and Counter Use.
Buffalo Standard Scales.
All Styles, Sizes and Variety of Finish
Call and Examine Them at Our Salesrooms.
The Fulton Gravity Scale Co.,
126 Walnut St. Cincinnati.
Illustrated Price Lists on Application.*

From the change of address from Central Avenue to Walnut Street, the trade card that started me on this quest can now be dated to between October 1881 and November 1882. Fulton was now also an agent for Buffalo Scales, and the mention of an illustrated price list is particularly noteworthy.

Just such a remarkable piece of ephemera showed up quite recently on eBay, and I was luckily able to purchase it. It is a wealth of information, even though undated (Figures 6a and 6b). It is an Illustrated Price-List for Fulton's Gravity Scales, with the name of the Chicago agent F. M. Van Etten on the front page. The two scales illustrated on the front are identical to those on the 1881-1882 trade card with the exception that the large scale has a rectangular platform top that replaced the earlier flat round top. The round top has not yet been seen on any scales, or in ads other than the 1881-1882 trade card and the June 1881 city directory ad⁶. This price list illustrates and prices four distinct families of scales: Tea & Tobacco, Druggists, Family and Counter, and Butter and Meat. There is some overlap in models, but the total number of scales shown and priced is extraordinary, and shows what could be out there for collectors. The variables are capacity of 8 oz, 2 lbs., 4 lbs. and 10 lbs. and whether one wants a tin or a brass scoop, a platform or a scoop, or whether the

scale is plain (i. e. painted) or nickel plated. Noticeably absent is any mention of use as a postal scale, which was heavily promoted in the 1881 ads, or any mention of 25 lb models, for which there are examples (Figures 2a-b, 7a-b).

Here is a summary of my attempt to date this price list. Eleven purchasers of Fulton's Gravity Scales are listed who could be contacted for reference. I examined each name to find its known business dates. Two of the references are not particularly objective: the Gooch Freezer Company (Fulton's business partner and father-in-law), and M. Halstead & Co., who published the newspaper that Fulton regularly advertised in. All eleven purchasers were around for the entire decade from 1880-1890 with the exception of one. This is Scott & Church, Drugs, Livermore CA. They first partnered in 1881, but changed both the partners and the business name in 1885⁷.

The Cincinnati Post Office reference most likely is connected to this glowing endorsement in the advertising section of the *Cincinnati Daily Gazette* on September 24, 1881:

I am now using Fulton Gravity Scales in the Stamp Department of this office, and find them to be the most accurate, convenient, and reliable Scales I have ever used, possessing all the advantages claimed for them by the manufacturers.

Henry H. Muller Supt. Stamp Dept.

That this endorsement appeared just eighteen days before the first Fulton Gravity Scale advertisement suggests that Fulton probably gave Muller a scale to try out at the Cincinnati Post Office. Note that there is no specific reference to the Cincinnati Post Office, but locals would have certainly known Muller, who started there as a clerk in 1870. Muller was promoted to Assistant Postmaster on March 1, 1882, and was in that position until 1893⁸. The Cincinnati Post Office reference is undoubtedly after the September 1881 endorsement, and after Muller's promotion in March 1882.

One of the price list references is for the Secretary of State, Springfield, Ills. Fortunately, due to government bureaucracy, the purchase of a Fulton Gravity Scale is documented as *Office Expenses, Dec 20, 1881. R. M. Fulton & Co. 1 No. 1 scale, brass top \$3.00*⁹. The purchase relatively soon after the scale was advertised shows that Illinois was an early adopter. This also shows the cost of the scale in late 1881 was \$3.00. All this gives a relatively broad date range from 1882 to 1885.

What about the Manufacturers' Agent F. M. Van Etten at 78 and 80 Lake Street? Frank M. Van Etten was listed in the 1880 census for Chicago as 32 years old, married with one young son, and an occupation of Novelties & Notions. From Chicago city directories, we find that he was at the 78 and 80 Lake Street address only in the 1882 directory, which was published in January¹⁰. This, coupled with the analysis of the eleven references and the first Fulton ad, shows that this Fulton's Gravity Scale Illustrated Price List dates from between October 1881 and the end of 1882.

I found an intriguing on-line reference to another piece of Fulton ephemera described as a trade card, measuring 2 1/8" x 5 1/4". It is only identified as *Fulton's Gravity Scales. Patented March 16, 1880, Improved 1883 Philadelphia*, and is listed in Hong Kong University's library catalogue. An email got the response that this trade card is not in their library, but that an electronic image is available to their students on a proprietary database. Not wishing to matriculate at this point in Hong Kong, I was finally able to track down the original source of the on-line image at the American Antiquarian Society, and received prints of both sides (Figures 8a & 8b)¹¹. In addition to an illustration of a 4 lb scale on the face of the advertising sheet, there is a price list for three family-type scoop scales with capacities of 8 oz, 2 lbs, and 4 lbs priced at \$3.50, \$4.50, and \$5.50, respectively. There are also corresponding models of postal scales with a small platform in place of the scoop priced 50 cents lower for each scale. The No. 1 postal scale is priced at \$4.00, and is likely the same *No. 1 scale, brass top \$3.00* that was bought by the state of Illinois in December 1881. The ad also gives other useful information: *NOTE. These Scales are handsomely nickel plated, the dials and scoops are made of brass,*

and other materials used are of the VERY BEST. Each scale is packed in a separate wooden box for ready shipment.

Several examples of Fulton's scales show evidence of nickel plating, though it must have been a thin plating, as it is largely gone or painted over on most existing scales (Figures 9-12). The ad also gives hope that a box for Fulton's Gravity Scale may be found.

In addition to the patent date, the front page of the ad says *Improved 1883. Awarded Highest Premium at Cincinnati Industrial Exposition 1882, for their Superior Excellence.*

This dates the ad to 1883 or later. The addition of *Improved 1883* appears to be purely marketing, as no patent improvement can be located. It may also be a reference to the fact that on February 13, 1883, the Fulton Gravity Scale Company was issued a trademark No. 10,035 for Scales¹². The 1882 award was actually from the 1881 Cincinnati Industrial Exposition, for the *Best Display of Counter Scales. Silver Medal to R. M. Fulton & Co., Cincinnati*¹³. This was a beautiful silver medal engraved *R. M. Fulton & Co.*, which may yet turn up. The dealer's name on the sheet is Buchanan, Smedley & Bromley, Importers & Wholesale Dealers in Photographic Supplies. Most helpful is the mention that they are General Agents for Platinotype Materials, as we learn from an April 23, 1884 *Philadelphia Inquirer* announcement that:

Messrs Buchanan, Smedley & Bromley, of No. 25 North Seventh Street, have become the general agents of the Platinotype process of photography.

On April 25, 1884, they advertised *Free-"Amateur Photographers" take notice-By special arrangement we offer (FREE) a Platinotype License to every purchaser of an "Amateur Outfit."* This photographic supply business is not listed in the January 1884 Philadelphia directory, but appeared for the first time in January 1885 at the 25 N. Seventh St. address. The *Inquirer* reported that a fire badly damaged their building on September 21, 1886. This evidently prompted a move, and their address was listed at 1030 Arch Street in the January 1887 directory. This Fulton Gravity Scale ad can be dated to between April 1884 and September 1886. Stock ads like this were undoubtedly produced by Fulton for different retailers, but their ephemeral nature gives little chance of survival.

All Fulton's Gravity Scales seen so far have the brass plate marked TRADE MARK REG'D in addition to the March 16, 1880 patent date, which implies they were made after the registration date of February 13, 1883. There may well be earlier examples without the trademark notice. It seems reasonable that Platt Evens Jr. would have engraved all the dies for the brass nameplates. These plates were riveted onto the cast iron frame using copper rivets through drilled holes, as was the brass index. This relatively expensive construction technique is not seen on other scales of the period (Figure 10b).

Further mining of the Cincinnati city directories gave up another valuable nugget. In the June 1881 directory, Platt Evens Jr. listed his occupation as Seal Engraver and Die Sinker; Scale Manufacturer and Model Maker. This is also the same directory in which Fulton's first notice for his scale



Figure 12a. 4 lb Fulton's Gravity Scale, Domiger collection. Photograph by Bill James.

Figure 12b. 4 lb Fulton's Gravity Scale, Berning collection. Photograph by Jan Berning.

appeared. This shows that Evens was involved from the start with Fulton in the scale manufacturing. This continued through the June 1883 directory, in which Evens was listed as *Foreman, Fulton Gravity Scale Co.*

The only ad I was able to locate from 1883 made no mention of the pendulum scale, and appeared in the *Cincinnati Commercial Tribune* on February 18, 1883:

*Store Trucks, Platform Scales
Warehouse Scales at Reduced Prices
The Fulton Gravity Scale Co.
126 Walnut Street*

This sale may have suggested things were not so rosy at Fulton, because just five months later the following notice appeared in the July 15, 1883 issue of the *Cincinnati Commercial Tribune*:

In the Superior Court yesterday, Burnet & Co. brought suit against the Fulton Gravity Scale Company, claiming \$783.80 as due on an account for a certain number of scales manufactured for the defendant under a contract, and \$3000 as damages for the breach of contract by the defendants who engaged to pay for the manufacture of three thousand scales.

From this lawsuit, we finally learn the actual manufacturer of the scales, as well as the manufacturing cost of around \$1 per scale. This also suggests that perhaps as many as 800 scales had already been manufactured but had not been paid for, with an unfulfilled commitment to purchase another 3,000 scales. How could this happen in the short space of only two years for a product that seems head and shoulders above its contemporary rivals?

Burnet & Egan, Architectural Iron Works, was formed in Cincinnati between the appearance of the June 1880 and the June 1881 city directory, in which they proudly advertised in a half-page ad a plethora of cast and wrought iron products such as iron store fronts, columns and lintels, railings, bolts, anchors, garden vases, etc. If judged by the size and content of the ad, this company seemed to be well-equipped, if not overqualified, to do the castings for the Fulton Gravity Scale. The principals were Arthur G. Burnet and James Egan. James Egan was listed as a 47-year old Irish-born iron finisher in the 1880 census. Burnet was the great-grandson of the first mayor of Cincinnati, and was only 25 years old in 1881. On October 12, 1881, after little more than a year in business, they dissolved their partnership, and the name changed to Burnet & Co¹⁴. This was a suddenly formed partnership with the young Arthur G. Burnet and his father Staats G. Burnet as the principle owner. Staats abruptly moved back to Cincinnati from Iowa to help his son in the iron business¹⁵.

In 1867, Staats and his family moved to Leroy, Iowa because of a cholera epidemic in Cincinnati. He became an Iowa state representative and served in the legislature from 1873 to 1876, and was listed as a farmer in both the 1870 and 1880 censuses¹⁶. Burnet & Co did not last long either, and their final directory listing was in 1885. Staats died in 1888, and Arthur moved to Charlottesville, Virginia and became a farmer. It appears that Fulton picked an inexperienced company to manufacture his scales, and Burnet had an inexperienced customer.

Having lost his local source of scale manufacturing, Fulton looked elsewhere, and found a large company in Cleveland, Ohio that had evidently not heard of the lawsuit. This also did not last for long. On September 18, 1888, the *Cincinnati Commercial Tribune* reported the following: *Fulton Gravity Scale Company Insolvent. Court Briefs. Jos. B. Maison filed his report as referee in the case of the Cleveland Rolling Mill Co. vs. the Fulton Gravity Scale Company. The indebtedness is \$2517.85, with costs and interest to be added.*



The amount paid in on the capital stock is sixty percent. It will require an assessment of eleven per cent on the stock to pay off the indebtedness. The stockholders are R. M. Fulton, 29 1/2 shares, Chas. Gooch, 2 shares, Theo. Kraft 1 share, H. M. Richardson, 3 shares. The referee finds the company is insolvent.

With this short report, the Fulton's Gravity Scale ended its relatively brief existence. Judging from the amount owed, Cleveland Rolling Mills may have made upwards of 3,000 scales for Fulton. From this suit, we also learn that there were two shareholders besides Fulton and Gooch. Theodore Kraft was Superintendent of the Gooch Freezer Company, and H. M. Richardson was a Cincinnati boot and shoe manufacturer's agent. The Fulton Gravity Scale Company was listed at 109 Sycamore (Gooch's address) in the June, 1885 Cincinnati business directory. The last listing for the Fulton Gravity Scale Company was in the June, 1887 Cincinnati business directory, when they were located at 7 W. 4th.

This all seemed like a plausible, relatively complete history of this interesting, but short-lived, scale company until Jerry Katz shared with me an astounding undated advertising sheet from his collection (Figure 13). This indicated that there was yet another version of the patented Evens scale sold under the name *Perfect Platform Family Scale*, and manufactured by the Cincinnati firm of Forshee and McMakin. This set me off in an entirely new direction to try to place this undated advertisement within its proper historical context, and raised a number of questions. Were Forshee and McMakin the manufacturers of the Evens scale before Fulton's 1881 scale, or after the first Fulton lawsuit in 1883, or after Fulton finally went bankrupt in 1888? If after 1888, how long were they in business? Research on Forshee and McMakin reveals that their main business was as subscription book publishers. They initially formed a partnership in 1878, and dissolved it in 1896¹⁷. Two examples of their books are *Stanley's Adventures* and *Ladies of the White House*, both immensely popular at the time, which they broadly advertised to agents in newspapers in Ohio, West Virginia, and Wisconsin. Further investigation shows that they were not publishers in the conventional sense, but purchased the right to sell popular books with their own imprint through agents. For example, the true publisher of *Ladies of the White House* was Bradley & Co. in Philadelphia. One could either purchase the same book in bright red cloth nicely decorated in black and gilt with a Bradley imprint on the title page or with a Forshee & McMakin imprint. They, as well as other subscription publishers for this same popular book, served to help distribute books well beyond the original publisher's geographical customer base. Forshee & McMakin probably did not even handle or warehouse books, but generated orders for the Philadelphia publisher, who contracted out the printing and binding. Between 1880 and 1881 the Forshee & McMakin book imprint address was 188 and 190 W. Fifth Street, the same as that on the advertising sheet for the *Perfect Family Scale*.

Clearly, they were also involved in other ventures besides publishing, like generating a market for Evens's pendulum scale. Like Fulton, they did not actually manufacture the scales, but were agents to help promote sales through their network of traveling book salesmen. In addition to the *Perfect Family Scale*, Jerry's advertising sheet has three other pages of products sold by Forshee & McMakin: *The Perfect Lamp Chimney Stove*, *Reflecting Safety Lamps*, and *The Perfect Coffee Pot*, reflecting their penchant for the word *Perfect*. As subscription publishers, Forshee and McMakin stopped using the 188 and 190 W. Fifth Street address by 1882, and from then on were only listed at 188 W. Fifth Street. I thought I could then reasonably assign a date for this sheet after the patent issued on March 16, 1880 and before the June 1881 appearance of the Fulton's Gravity Scale city directory listing.

Their advertisement shows a brass plaque stamped *Perfect Family Scale Pat Mar. 16, 1880*. The scale was priced at \$2.50 and of a design and 25 lb capacity not shown in the ca. 1882 Fulton price list, where the least expensive highest capacity scale, 10 lb, was priced at \$5.00. This lower price is consistent with an earlier, rather than later, date for the *Perfect Family Scale*. This same 25 lb design was produced by Fulton with a trade mark dated to 1883 or later (Figures 2b, 7b).

It seems reasonable to assume that Forshee and McMakin initially purchased or licensed the pendulum scale

patent rights from Platt Evens, Jr. shortly after the patent issued on March 16, 1880. Despite their compelling ad, they did not broadly develop the market, as no examples of the *Perfect Family Scale* have yet surfaced, though some were likely made. Within a year, the rights were sold or licensed to Gooch/Fulton, and it became known as Fulton's Gravity Scale. Fulton copied his "no springs, no slides, and no weights" promotion from the advertising of Forshee and McMakin, and adopted Even's gravity scale name.

While digging for yet more information on Forshee & McMakin, another twist emerged and I had to go back to the drawing board. Newspaper advertisements began appearing as early as September 23, 1880 until November 1883 for a new Cincinnati scale company, called the Domestic Scale Company. These ads appeared in slightly different forms in many newspapers. Here is a typical ad from the *Wheeling West Virginia Register*, October 22, 1880: *Platform Family Scale (Patents Wanted). \$5 per day made selling our Platform Family Scale. Weighs accurately up to 25 lbs. Its handsome appearance sells it at sight. Retail price \$2. Other Family scales weighing 25 lbs cost \$5. A regular Boom for Agents. Exclusive territory given free. Terms & rapid sales surprise old agents. Address Domestic Scale Company. Cincinnati, O.* The only address given was Cincinnati, but a clue was that several of these small ads were directly adjacent to Forshee & McMakin's large ad for *Ladies of the White House*. The 1883 Cincinnati directory revealed all when it listed Forshee & McMakin as *publishers; also prop'rs Domestic Scale Co.* This company was listed at 188 and 190 W. 5th Street until at least the June 1888 Cincinnati directory, and did not appear in the June, 1892 directory.

Scale collectors would immediately recognize the small illustration of the scale they were promoting to agents at \$1.50 to \$2.00. This is the Brown candlestick scale, a cheaply made spring scale based on a patent issued to Lewis E. Brown of Cincinnati on December 3, 1878, patent number 210,493¹⁸. As pictured in the patent, it is well designed, but the scales that were produced are cheaply made in stamped nickel plated brass or zinc and bear only a faint resemblance to the patent drawing. Finding that Forshee & McMakin were the owners of a Cincinnati scale company at the same address in Jerry's ad from 1883 to at least 1888 was of little help in finding exactly where the *Perfect Family Scale* fits into this puzzle. I then investigated the three ads for other household products in the same advertising sheet. I struck out on two products, but found Forshee & McMakin heavily advertised for agents for their two reflecting safety lamps in several newspapers between December 1883 and December 1884. Not knowing when to quit, I also found a few ads between October 1887 and February 1888. Unfortunately, this leaves me in the same state of ignorance as to the date of the ad, and it is still unclear what role these agents and the *Perfect Family Scale* had, if any, in Fulton's Gravity Scale.

What happened to Robert M. Fulton after his scale company failed in 1888? By the early 1890s he had moved to New York City and was selling real estate¹⁹. While his pendulum scale was not a financial success, he quickly picked himself up and found a profession where he excelled, and in the meantime, left a legacy of fascinating scales.

Acknowledgments

The author would like to express sincere appreciation to all those who shared pictures of their scales and ephemera.

Notes

1. For a detailed account of Evens' seal press and patent disputes with Charles F. Hall, another press manufacturer, see Chauncey Loomis, *Weird and Tragic Shores: The Story of Charles Francis Hall, Explorer*, Modern Library, a division of Random House, 2000.
2. Kentucky Death Records; Covington is directly across the Ohio River from Cincinnati.
3. *Scientific American*, Volume 7, Issue 4, Oct 11, 1851, page 31. At the time, the U. S. Patent Office required all patents to be accompanied by a model. Not many years later, the Patent Office tried unsuccessfully to stop this requirement due to its warehouses overflowing with several hundred thousand patent models. See William and Marijns Ray, *The Art of Invention. Patent Models and Their Makers*. Princeton: Pyne Press, 1974 for the story of the patent models.
4. Ripley is located on the Ohio River, and is around 50 miles southeast of Cincinnati, and was the original home of John Fulton's wife, Arabella.
5. *Cincinnati Daily Gazette*, January 7, 1881; *Cincinnati Commercial Tribune*, January 7, 1881.

19. The 1900 census shows that he and his wife Emmie were in White Plains, NY, and by the 1910 census they were in White Plains, NY, where he died and Robert M. Fulton was back in Manhattan living at 100 West 11th Street.

OVER, 188 and 190 W. Fifth St., CINCINNATI, O.

degree in 1849 from Woodward College in Cincinnati. He had prior to his employment twenty-one hands with a manufactured value of \$50,000. 1859 Cincinnati: 1859, Page 340; see also John L. Mitchell. *Tennessee* 417. S. G. BURNET & CO., Manufacturers of Wire Cloth, Selves, S. Rat Traps, and all kinds of Wire Products, dealers in Bright and Yellow Iron, OHIO, attention given to the weaving of Wire Cloth for Fan Mills, etc. *Genealogy*, Iowa; Henrietta E. Bromwell. *The Bromwell genealogy*. Denver: *Compendium of American Genealogy*, 1942, vol VI, p. 78 and vol VII, p. 21, 1888.



A Balanced View

Happy New Year!! We hope that you are all well and that your scale collections continue to grow and provide you with many hours of pleasure. We are embarking on another exciting year for ISASC. The annual convention in Portland in May and the trip to Germany in October both promise to be highlights. As well there are already plans and dates in place for several regional meetings in August. We will keep you posted and encourage you to participate.

Kurt Beyreis has asked me to remind some of you who may have forgotten to send in the 2010 dues to please do so. Please mail to; Kurt Beyreis Treasurer ISASC, 1730 Van Buren Road, Maurertown, VA 22644.

Election of Officers

Ballots for the election of officers were mailed out with the last newsletter. There was normal excellent response. Thank you all for participating in the election of officers. The results have been tabulated and I am pleased to advise that Mary Anne and Shirley have been elected for the following terms:

Vice President, Mary Ann Murphy, (term June 1, 2010 to May 31, 2013)

Vice President, Shirley Schmidt, (term June 1, 2010 to May 31, 2013)

On behalf of the ISASC membership, I extend our thanks to Mary Anne and Shirley for their hard work and dedication.

Lyman Orton Collection

I am pleased to share with you a glance of the Lyman Orton collection. Lyman is a new member to ISASC joining last fall. He and his family are in the process of acquiring scales and related material of the Fairbanks and the Howe Scale Companies. Ultimately they plan to display their collections in their two

Vermont stores, The Vermont Country Store, one in Weston and the other in Rockingham. Their first store was opened by Vrest and Ellen Orton in 1946 and has been operated by the Orton family since then. Today, The Vermont Country Store is owned by Lyman Orton and sons Cabot, Gardner and Eliot, 7th & 8th generation Vermonters, and 3rd & 4th generation storekeepers. They still adhere to the old-fashioned values set forth by Vrest and take pride in being



“The Purveyors of the Practical and Hard-to-Find.”

As both Fairbanks and Howe have their roots in Vermont one can easily understand why Lyman wants

to create a collection of scales made by these well-known and respected Vermont companies. So they have set about this mission with Gusto!! They would like to hear from any of our members who could assist with this project. As you can see from the picture, Lyman and his sons have a pretty good start. Recently Lyman sent me the following email “Our customers at The Vermont Country Store in Weston and Rockingham Vermont love looking at our various antiques which include a collection of chrome toasters and a few Fairbanks scales. Not only were they made in Vermont but my three sons all have the middle name of Fairbanks as their mother is of the Massachusetts branch who were cousins to Thaddeus. I want to expand the collection and am interested in single scales or entire collections.



Eventually we'll put the collection onto our web site,

www.VermontCountryStore.com.

Please contact me at lymanorton@springtips.com or call 970-846-9270.”

I am sure Lyman and his sons would be delighted to have you stop in and visit their stores and to see their collection any time that you may be in the Vermont area.

Collection Development Committee Report

Mary Anne Murphy has asked me to bring you up to date on the status of the ISASC Collection and reports the following:

There have been several new contributions to the collection. Chuck Lamlein has gifted us another section of his collection. Ruth Willard has sent us two boxes of scale industry trade publications and we have received three analytical balances from John Wells.

In addition, Carol Hayden was contacted by someone looking to donate an old scale used in adding vitamin powders to juices. After reviewing photos, we decided to accept the scale. The company was switching to a digital scale, and the company president thought the scale should be preserved rather than ending up in a dumpster. He found us on the internet and was delighted to be able to tell his disbelieving employees that he found someone who wanted the scale.

Kurt and Ann Beyreis drove to Kentucky, picked up the scale, which was put in their van by forklift, and drove it to Pittsburgh. Later they and Les Firth used their ingenuity to remove it from the van and get it safely into the facility where it is now on display. Interestingly, in going through some of the ephemera donated by Bob Stein, we found a flyer on that scale, which was made by the Kron Company. The Kron Company was later taken over by Cardinal Scale Co. and our scale bears a Cardinal label pasted over the Kron label.

With the addition of all the donations from 2009, we have finally outgrown the single large storage area and have added another smaller area (at a great price due to the economy). This works out well because it allows us to photograph and catalogue new additions and store duplicates prior to sale while devoting the primary area to display of the collection. There have been a number of inquiries from members who are looking into donating their collections. We have also had a number of members come to Pittsburgh and view the collection.

Portland 2010 ISASC Convention

The annual convention in Portland is rapidly approaching. As always it promises to be a fun-filled and interesting time. Dick and Peggy Clark have put together a wonderful agenda. You should have received the registration package by now and I would encourage you all to sign up and join us in Portland. Further details have been posted to the web site. I hope to see you there.

Trip to Germany

Utz Schmidt reports that the plans for the trip to Germany this fall are well underway and that so far 35 enthusiastic 'Scalies' have signed up. It is not too

late; there is still room for a few more. Utz can be reached by email at uschmidt@avci.net or you can give him a call at 810-376-4438.

Book Sale

Here's an opportunity to increase your library! We have an inventory of books and other material that we offered for sale at reduced prices. The two featured below are offered at \$12.00 each. This price includes shipping. If both are ordered at the same time the price will be \$20.00.

SCALES – SCALES – SCALES

Six catalogs in one volume with hundreds of scales: Standard Scales (1893) by E & T Fairbanks & Co, Standard Market Scales by The Fairbanks Company, Jones Scale, The Angdile, Chemical and Physical, Apparatus (1891/Henry Heil) and Torsion Balances (1922). Also includes excerpts of scales from yesteryear hardware and houseware catalogs (1903, 1910, 1912). 308 pages.

FAIRBANKS SCALES

A retrospective, featuring a 1918 Fairbanks catalog with more than 150 scales of various types. Includes 17 mini-catalogs from 1902 to 1908, each devoted to a Fairbanks specialty: druggists, prescription, confectioners; weight-masters beams; portable platform; personal and creamery; factory; warehouse; flour and grain; hay, stock and coal; packing house; counter; trip and even balance; weights and parts; agate bearing; miscellaneous; cement testers; weight-masters outfits; fine scales. 306 pages.

Publicity Committee

This committee continues to look for ways to attract new members. Shirley Schmidt reports that we have taken ads in Antique Week for January, February and March and in the Antique Trader for May, June and July. As well you may have noticed in December that we offered on eBay under the scales category a membership to ISASC. The listing had a lot of hits and as a result our society had significantly greater visibility with people who actually collect scales. Shirley plans to repeat the eBay listing a couple of times a year. It is very efficient; the only expense is the cost of the listing. Good work PC (Publicity Committee)!

Welcome To New Members

I would like to take this opportunity to welcome the following new members and encourage them to contact any of our members should they have questions.

James Lambert
James Sommerville
John & Janet Wilkinson

Larchmont, New York
Anchorage, Alaska
El Caton, California

Vermont History Exposition

You may recall that ISASC member Brooke Paige participated in an event several years ago where he set up a display tent and filled it with Fairbanks scales and other Fairbanks items. He dressed the part, donning period clothes and presented himself as Thaddeus Fairbanks.



Well, Brooke is at it again. This year he will display scales and other materials of the Howe Scale Company. His 30 by 12 foot tent will be overflowing with antique Howe scales, signs and other advertising material. He will have between 40 and 50 Howe scales on display covering examples from the three Vermont towns where they were manufactured: Vergennes, Brandon and Rutland. It is all part of the Vermont History Exposition being held this June 26th and 27th at "The Worlds Fairground" in Tunbridge, Vermont. The exposition has more than 150 entries from Vermont Historical Societies, museums and other cultural groups. Assisting him will be several past employees of the Howe Scale Company.

Brooke is looking for any volunteers who may wish to help him man the exhibit. If you are in the area and wish to help, please contact Brooke by email at domnap@sover-net or by phone at 802-883-2320. It should be fun! Brooke would love to see you there. He has included in this mailing a reproduction of a Howe, Brandon Manufacturing folding trade card, with his compliments.



In Memoriam

Sadly, I report the passing of the following ISASC members. John Schott passed away on November 9, 2009. John had been a member of ISASC since 1996. He and Lois attended their first convention in Toronto in 1998. They also attended conventions in Atlanta, Chicago, Pittsburgh, San Antonio, Minneapolis and Chattanooga. He co-hosted the 2009 Kansas City convention where we had the pleasure of seeing his collection.

Lorie Turrall passed away November 27, 2009 and Garrett Turrall passed away January 6, 2010. The Turralls were enthusiastic collectors of egg scales. Since joining ISASC in 2007, Garrett and Lorie attended the Chattanooga and Kansas City conventions together and were active participants in several of the Midwest and Michigan regional meetings.

Can You Help?

New member John Wilkinson is looking for Howard & Davis gold sales. If anyone can help John with his quest please contact him by email at fourwilks@hotmail.com or by phone at 619-588-1347.

New member Lyman Orton is interested in scales and other related material on Fairbanks and Howe scales. He is looking for single scales or whole collections. As stated earlier he is gathering these items in order to display them in his two Vermont Country Stores. If you have items that may be of interest to him he can be reached at lymanorton@springsips.com or by phone at 970-870-6288.

So from the frozen north, I wish you all good hunting as you continue the quest for the next 'Gem' of a scale

Keep on Scaling! Regards,



Peter Laycock,
President ISASC

**Barbara Streisand, Barbara Bush,
Julie Andrews, Nancy Reagan...**

While you won't find the ladies listed above in attendance at the 32nd annual ISASC Convention in Portland, you might catch them in the International Rose Test Gardens near the Oregon Zoo and the Japanese Gardens in Washington Park.

**Come Early OR
Stay and Play
another Day in
Portland!**



THURSDAY

**DINE & VISIT: THE
MUSEUM of the
OREGON TERRITORY**

**STAY & VISIT: THE
MONARCH HOTEL &
CONVENTION
CENTER**



FRIDAY

VISIT:
**PITTOCK
MANSION**



VISIT:
**EVERGREEN
AVIATION
MUSEUM**



MONDAY

VISIT: MT ST HELEN'S
NATIONAL VOLCANIC
MONUMENT



DINE: FIRE MT GRILL
HOFFSTADT BLUFFS
VISITOR CENTER



History of the HOWE Scale Company

Vergennes, Brandon and Rutland Vermont

In the late 18th century Vermont manufacturers were the world leaders in the production of weighing machines. HOWE SCALES of Rutland, Vermont along with it's chief rival FAIRBANKS SCALES in St. Johnsbury, Vermont produced a majority of all scales used throughout the world.

The history of HOWE is an episodic adventure that began in 1852 when Francis Strong and Thomas Ross, wheelwrights from Vergennes, Vermont conceived an improved design for the construction platform scales. With local financial partners, they founded the Sampson Scale Works in Vergennes and began producing a wide variety of scales.

In 1857, the partnership dissolved after a management quarrel and Strong and Ross found new support with John Howe Jr., a foundry owner Brandon, Vermont who was producing iron wheels for railway cars. The newly established enterprise was soon producing an extensive line of scales under the HOWE trade name that were enthusiastically accepted by industry and commerce. The superiority of the HOWE product was immediately acknowledged by the numerous "honors of merit" for accuracy and practicality awarded at National and International Exhibitions. Tragedy accompanied the firms success, a spectacular fire visited the scale works at Brandon and in time resulted in financial difficulties. In 1870, Nathan Sprague rescued the faltering enterprise, naming his venture The Brandon Manufacturing Company and retaining the famous HOWE name for the products the firm produced.

In 1876, Nathan Sprague and his partner Vermont Governor John Boardman Page decided to relocate the scale works to a strategic location at the intersection of area railway lines in Rutland, Vermont where the HOWE SCALE WORKS would grow and prosper for nearly a century as the centerpiece of industry in its new home.

At this year's Vermont History EXPO, Vermont Historical Society lifetime member and industrial historian Brooke Paige of Washington, Vermont along with local historians and members of the International Society of Antique Scale Collectors will recreate a sales display typical of those staged by HOWE to promote their products at Agricultural and Industrial Exhibitions in the 1880's and '90's.

We will have an extensive array of weighing machines made by the HOWE SCALE WORKS including Butcher, Bicycle, Cotton, Counter, Dormant, Physician, Portable Scales as well as company documents and advertising/sales ephemera all displayed under our period canvas tent. Visitors to the EXPO will experience a period sales presentation, an oral history about the scale works and discuss the history of Howe Scales with local historians and the principles of weighing machines with members of the International Society of Antiques Scale Collectors. Visitors will be encouraged to test various scales and can have themselves weighed using our vintage Howe Scales, with their weight recorded on a decorative card reminiscent of those used at the HOWE display at the 1876 International Centennial Exhibition at Philadelphia.

The Vermont History EXPO 2010, nicknamed "History's Country Fair" is presented by the Vermont Historical Society. The Vermont History EXPO is one of the "Top 10" Summer Events in New England. Over 150 local Historical Societies, Museums and Heritage Organizations present a fantastic array of subjects on every imaginable aspect of Vermont History. It is a wonderful experience for young and old alike. This year the Vermont History EXPO will be held on June 26th and 27th at the Tunbridge World's Fairgrounds in Tunbridge, Vermont (about 1/2 hour west of White River Junction).

Complete information on the Vermont Historical Society's Vermont History EXPO 2010 can be found on-line at: www.vermonthistory.org or by phone at 1-802-479-8500.

Several Members of the I.S.A.S.C have already "signed on" to help out, however since "many hands make light work" and more camaraderie, anyone wishing to help Brooke out with the Howe Exhibit - PLEASE contact him by phone at: 802-883-2320, by e-mail at: donnap@sover.net, or by post at: Brooke Paige, P.O. Box #41, Washington VT 05675.

"We look forward to visiting with you at the Vermont History EXPO 2010!"



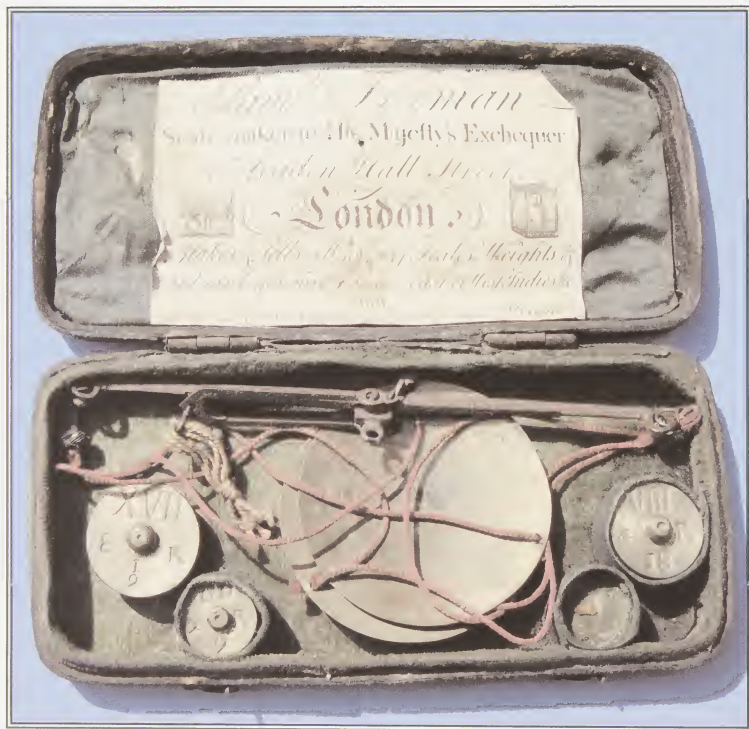


EQUILIBRIUM

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2010 ISSUE NO. 2

PAGES 3573 - 3600



Cover Picture

This plywood box is covered with shagreen (the tanned skin of the dog-fish, found in the sea off Britain). The base is lined with hand-cut green velvet, very characteristic of c.1700. The lid is padded with lambs' wool, and covered with green silk. The beam has a flat pointer with a hole at its base, again, very characteristic of c.1700.

The label is the first example seen of this design. Because there were three Samuel Freemans, the internal clues must be studied. "Maker to His Majesty's Exchequer" means that the period of Queen Anne's reign (1702-14) has to be excluded. So this label was printed either during the reign of William III, or during the reign of George I. If the former, it is highly likely that Samuel Freeman talked personally to Sir Isaac Newton while he was Master of the Mint, and deeply concerned with the need for accurate scales.

The label picturing a diamond scale on the left, and an assay balance on the right, give a rare glimpse into the trade at that early period. Read the article, pages 3575-78 to learn more.

Contents

From Isaac Newton to Blackbeard?

Dr. Ludwig Ramacher 3575-3578

J. Askey?

Michael Foster 3579-3584

Showcase

3584

History of H. Fereday & Sons Ltd.

Scalemakers 1840-2010

David Matthews 3585-3590

Mancur - Hide Scales - Mond Waage -

Peson - C. Unser

Rein Kok 3591-3594

Avery Counting Scales

Diana Crawford-Hitchins 3594-3600

Showcase

3600



EQUILIBRIUM is published quarterly in February, May, August and November.

© 2010 International Society of Antique Scale Collectors ISSN: 0893-2883

International Society of Antique Scale Collectors

Founded September 1976

Internal Revenue Service 501 (c) (3) EIN 36-2976411

3616 Noakes St., Los Angeles, CA 90023

Tel 323.263.6878 Fax 323.263.3147

www.isasc.org

Directors* and Officers 2010

President	Peter Laycock*
Vice Presidents	Bill James*
.....	Robert Jibben*
.....	Jerome Katz*
.....	Mary Anne Murphy*
.....	Shirley Schmidt*
Secretary	Carol Hayden*
Treasurer	Kurt Bcyreis*
Executive Secretary	Jan Macho

For membership information contact

Shirley Schmidt sschmidt@avci.net

5790 N. Lakeshore Rd. Palms, MI 48465

Published with the co-operation and support of

ISASC Europe

Founded October 1993

CHARITY COMMISSIONERS FOR ENGLAND & WALES No 1037558

www.isasce.com

Trustees* and Officers 2009-2010

Chairman	Norman Biggs*
Secretary	Thomas Allgeier*
Treasurer	Ken Govier*
Membership Secretary	Michael Robinson
Meeting Secretary	Janet Scarratt
European Representative	Jaap Visser
Publications Officer	David Apps
Information Officer	D Crawford-Hitchins
Trustee	Phil Holroyd*

For membership information contact

Michael Robinson, 18 Richmond Court,

Spital Walk, Boughton, Chester, CH3 5DA

Editor: Jan H. Berning, Tel 815.895.6328 Fax 815.895.6328 JHBerning@comcast.net

Associate Editor: Clifford Lushbough Tel 303.366.5471 cplush@comcast.net

Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

From Isaac Newton to Blackbeard?

The solution of an old riddle¹.

BY DR. LUDWIG RAMACHER

Decades ago some collectors of scales and weights, among them such memorable colleagues as Michael Crawforth and G.M.M. Houben were puzzled about weights to which they intended to give a home. (EQM pp. 1778ff, 1818, 1879).

The strange thing about these coinweights was that they showed English weight units in pennyweights and grains and for the reales units in the Spanish monetary system. Some of the described weights beside these units bore further marks, not identified at that time, later understood to be Spanish verification marks.



Figure 1. Two reales coinweight from Logrono.

The first of the photos, Figure 1, is a coinweight which says III [pennyweight] and 9 [grains] combined with 2 R for two reales, a Spanish silver coin. Next to that there is a mark which could be of a person (BILL/ABA) and something like a bridge combined with towers. The two weight indications are quite similar being 6,804 g. for the weight instead of 6,766 g. its legal mass.

Theories about the purpose of these weights included their being for use in Ireland, where Spanish coins circulated very widely, or for the Colonies where Spanish coins dominated the flow of money.

Years later, when I married a Portuguese lady, I became interested in weights. The first weights in our house were from the *Feira da Lardre*² in Lisbon. German scales and weights are well covered by all the German collectors who started long before me, so I decided to concentrate on scales and weights from Southern Europe.

Some lucky purchases, partly supported by the fascinating possibilities of modern communication and some knowledge in Romance languages, led to my unravelling of the puzzling English/Spanish weights and so I came into contact with some of the collectors still worrying over them like Gary Batz and Guido Zavattoni, and a bit later also with Diana Crawforth-Hitchins.

As a chemist I learned to be "curious as a herd of cows" as we say in German, so I started to ask (silly) questions of all kinds to people everywhere, first understanding nothing and then starting to learn slowly.

The advantage may have been that I was not at all driven by any knowledge about the history of English or Spanish weights, coinweights and coins. I learned a lot about the Spanish monetary and weight system during the further studies and had quite a few supporters from all over Spain and made friends during these discussions.

One result of all this communication was an article, published in German³ and Spanish⁴, I wrote together with Antonio Roma Valdes from the University of Santiago di Compostela in Galicia, about Spanish scale and weight makers and verifiers, who turned out to have been silversmiths in many parts of the country.

Together we discovered that the person marked as verifier on the weight shown in Figure 1, Francesco Billaba y Vilalba⁵, was a silversmith from Logrono in the province of Rioja, active around 1735 till 1748 at the latest.

Early on I thought this combination of Spanish and English weight units could not be random, but first thoughts were somehow blocked by the idea that trade between England and Spain could not have been that extensive over these centuries, as the two countries had been fighting each other most of the time. But, I soon understood that, despite the wars, trade existed and not that little of it especially as there were products on which each country had quasi-monopolies.

A black and white photo in the book of Mateu y Llopis⁹ about Spanish coinweights in the archeological museum in Madrid led to the next step, as it showed a coinweight made by the famous medal and coinweight maker, John Kirk in 1742, with a clearly Spanish verification mark (PAZ/TOR)¹⁰. So at least, at that time, the coin weights travelled and were even accepted for verification in Spain. So why not at other times?

The rate of 17½ pennyweights for eight reales and its subdivisions was announced during a distinct period at the beginning of the 18th century when for some time Isaac Newton⁸ was the Master of the Royal Mint in London. That gives us an idea of the timing of the production of these types of weights.

The following table shows the full relations between the mass of the four different types of coins from Spain and the mass indicated in pennyweight and grain⁹.

REALES	MASS INDICATED in DWT/GR	MASS of WEIGHT in GRAMS	LEGAL MASS for REALES
1R	II: 4½	3,402	3,383
2R	III: 9	6,804	6,766
4R	VIII: 18	13,608	13,532
8R	VXII: ½	27,216	27,064

Also we can show that many of the Spanish verification marks are from a period shortly after 1731, the date of a new coinage system in Spain. So obviously they were in use for several decades in Spain, notwithstanding possible changes of the exchange rate.



Figure 2. Two further examples of the weights¹⁰.



In 2007, I was able to buy a shagreen type coin scale box which contained three of these weights and its scale. The box still had its label. The label reads that Samuel Freeman¹¹ made such boxes for export to c.g. Spain, but also Turkey¹² and the East or West Indies¹³.

About Spanish coin scale boxes, there are well known cases from Catalunya and Valencia starting to be pro-



Figure 3. Coin scale box made by Samuel Freeman dedicated for export. Note the card pens glued to the velvet, that prevent the weights from moving.

duced there most probably after 1700¹⁴, and a few from Sevilla and Madrid.

Imports are known from Lyon¹⁵, Nürnberg¹⁶, Cologne¹⁷ and as we could show now, also from London.

It can be assumed at those times in the early 18th century that the coinweights were carried in their boxes, some of which where lost in those examples documented earlier. Also it is not too surprising that many labels disappeared, making the whole story that much more difficult to solve in the first place.

We also have indications, that similar coinweights seem to have been made in Spain later on; Guido Zavattoni has one box of Sevilla in his collection, but surely the original source of this type of boxes and weights is England.

Similar looking coinweights are known from several places in the Americas, but with partly or completely different inscriptions on them, possibly reflecting the different and changing exchange rates there. Several of the marks they show (including VR, not for Queen Victoria but as an indication of guarantee) are still not identified. That story will hopefully be told in the future.



Figure 5. Coinweight found in the wreck of Queen Anne's Revenge. As with other examples, the 8R appears to have been stamped by a different hand from that stamping the XVII^{1/2}

As I came towards the end of writing this story, I received an e-mail from Diana Crawforth-Hitchins showing me another photo¹⁸ of such a coinweight, not verified, but clearly the same type, combined with the information that this weight was found in the wreck of a ship which is thought to be the "Queen Anne's Revenge" whose captain was the notorious pirate Blackbeard, born Edward Teach. The coinweight does not contradict it, it falls into the right time period. The ship sank in 1718 off the coast of North Carolina. This fits very well to the timing of the production we were talking about.

Notes & References:

1. I have to thank Xisco Valles, Guido Zavattoni, Gary Batz and Diana Crawforth-Hitchins for many interesting debates on these weights and a lot of information without which this article would have not been possible.
2. Flea market every Wednesday and Saturday morning near the cathedral locally called Se in Lisbon. Worth going, even finding nothing, as it is full of old and new things and people. Beware of fakes especially cup weights.
3. *Maß & Gewicht*, Nr. 82, 2007
4. *Numisma*, Ano LVIII, Num.252, 2008
5. Identified by his marks on silverware, and Logrono by the coat of arms of the city.
6. Felipe Mateu y Llopis *Catálogo de los ponderales monetarios del museo arqueológico nacional* 1934, p.266, figure 166.
7. Clear, because the structure of the marks is always similar and refers to the name divided in two lines.
8. So not only apples influenced him.
9. Guido Zavattoni reminded us that these values are equivalent to the legal weight of the coins and not for coins still having the legal minimum weight.
10. Left: Marked in Burgos by Nicolas Martinez; right: marked in Oviedo by Juan Suarez.
11. It can be assumed that this is of Samuel Freeman I, freed in 1676, who died in 1714, as the following indications would indicate it to be quite early 18th century: the bright green cloth, the beam and the red cords. But with what we know now, Samuel Freeman II working from 1721 till 1752 can not be fully excluded.
12. An exported box to Turkey is still something to be discovered, which would of course contain a completely different set of weights.
13. I have seen pictures of a similar box with all weights in it, with a label of Walter Phillips.
14. Coinweights without boxes are known in Spain at least from 15th century on, maybe earlier (this refers only to Christian Spain, as the Arabs before did use coinweights obviously much earlier)
15. At least boxes from Lyon of the late 17th century are documented (one in my collection).
16. Nürnberg did deliver obviously not just a few but numerous boxes till the late 19th century.
17. In the *Museo de las Ferias* in Medina del Campo one example made by Tönnies Reidt of Cologne from 1650
18. Courtesy of Wendy Welsh / North Carolina Department of Cultural Resources. See also: <http://www.garonline.org/> for the full story of the finds on the "Queen Anne's Revenge".

Author's Biography:

Dr. Ludwig Ramacher lives with his wife and one child in Wachtendonk, Germany, where he is employed as a Chemist in Germany's largest waste management company. He is a member of the town council and, collects mainly Italian, Spanish and Portuguese scales, weights and measures.

J. Askey?

BY MICHAEL FOSTER

J. Askey, Brass Caster, Old Cross St, Birmingham and his rocker label and style progression.

The following facts are a result of my study of rockers from "J. ASKEY'S" labelled boxes and the Askey's crown stamp associated with them¹. Dates quoted are supported by documented references to the named owners or company, at the location, in the year indicated, and derived from Birmingham and Warwickshire directories.

Only one type of crown stamp has been found on the poise of rockers associated with J. Askey. However, I have currently identified five styles of poise labelling. The first two styles are 'ASKEY'S' only and 'ASKEY'S' with a flower stamp:



Drawing 1. Askey's Flower



Figure 1. Askey's on poise, no crown.



Figure 2. Askey's on poise with flower.

The next three have the Askey's crown stamp:



Drawing 2. Askey's crown.



Figure 3. Askey's on poise with Askey's crown.



Figure 4. Askey's Improved on poise with Askey's crown.



Figure 5. Askey's Improved on bevelled poise with crown.

There are currently seven known recorded versions of the Askey's rockers with a label and style progression.

The first rocker version has just the 'ASKEY'S' name stamped on the poise of the rocker, with a blank base and beam. The platters are labelled 'SOVEREIGN WARRANTED' and "HALF SOV" with gauge slots and a two-horn finial.



Figure 6. // Askey's first sovereign rocker version without crown stamp on poise or base.



Figure 6a. // Side view.



Figure 6b. // Note the blank base on this rocker.

All Askey's rockers were sold in a "J. ASKEY'S" labelled box seen below.



Figure 7. // Askey's box with label.

Box label reads: "J. ASKEY'S IMPROVED SOVEREIGN BALANCE, / WARRANTED CORRECT, / To Weigh and Gauge Sovereigns and Half-Sovereigns, / Being so exact that no Counterfeit can possibly go through the Gauge / of sufficient Weight to turn the Balance."

A close up of the "J. ASKEY'S" is shown from a second damaged box label.

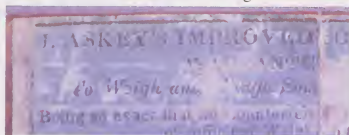


Figure 8. // Box with clear 'J. Askey's' on the label.

The second rocker version has the 'ASKEY'S' name stamped on the poise along with a flower stamp, see Drawing 1. The base and beam are blank and the style and platter labelling are the same as the first version.

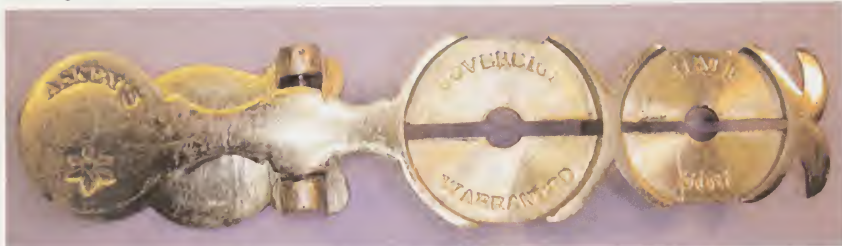


Figure 9. Askey's second sovereign rocker version with the flower stamp added to 'ASKEY'S' on poise.

As a side note the flower stamp on the poise is interesting for two reasons. The flower could be of the Narcissus genus also known as a jonquil, or a daffodil which the Birmingham area claims to be famous for. Daffodil Park that exists today in Edgbaston, Birmingham, is an area near the Rea River where daffodils were once grown as a commercial crop. About three miles away is the Birmingham Botanical Gardens and Glasshouses also Edgbaston, Birmingham, which were designed by J. C. Loudon, a leading garden planner, horticultural journalist and publisher, and opened to subscribers in 1832.

The Askey's crown stamp, see Drawing 2, was used for the first time on the third rocker version. It is seen here with the 'ASKEY'S' name and crown stamp on the poise, but still with a blank base as on the first two versions.



Figure 10. Askey's third sovereign rocker version with the crown stamp added to 'ASKEY'S' on poise.

The fourth rocker version introduces the 'IMPROVED' stamp on the poise and starts to label the base with 'ASKEY'S IMPROVED' surrounding the Askey's crown stamp.



Figure 11. Askey's fourth sovereign rocker version with crown stamp and 'ASKEY'S IMPROVED' on the poise.



Figure 11a. // Side view.



Figure 11b. // Note the 'ASKEY'S IMPROVED' surrounding the crown stamp added on the base.

The fifth rocker version is a steel bushed rocker with the 'BUSH'D' stamp added on the beam.



Figure 12. // Askey's fifth sovereign rocker version with crown stamp and 'ASKEY'S IMPROVED' on the poise and base, 'BUSH'D' on the beam.

This rocker was also available in a nickel-plated version shown in figure 13. This sixth rocker version has 'SOVEREIGN WARRANTED' around the Askey's crown on the base.



Figure 13. // Askey's sixth sovereign rocker in a nickel-plated version with crown stamp and 'ASKEY'S IMPROVED' on the poise 'BUSH'D' on the arm and 'SOVEREIGN WARRANTED' around the crown stamp on the base.

The seventh version of the Askey's rocker has the same labelling as the fifth version but with bevelled edges on the poise, shown in figure 14.



Figure 14. ♣ ♣ Askey's seventh sovereign rocker version with crown stamp and 'ASKEY'S IMPROVED' on the base and a bevelled edge poise. 'BUSH'D' on the arm.



Figure 14a. ♣ ♣ Side view.



Figure 14b. ♣ ♣ Note the 'ASKEY'S IMPROVED' surrounding the crown stamp.

All of these rockers are very similar except for the poise and base labelling, the later addition of 'BUSH'D' on the beam, and perhaps later still the poise bevelling. They all have the same platter labelling of 'SOVEREIGN WARRANTED' and 'HALF SOV' that is typical of Askey's rockers.

If we start looking for J. Askey of Birmingham, in the period from 1818 to 1875, we find a J. Askey, brass caster, Old Cross, Birmingham. The 'J.' on the box appears to have been for Joseph or James at the Old Cross St. location. The following is a summary of the research and time line information from Birmingham Directories for J. Askey:

J. Askey

1829	Joseph Askey, brass caster, Old Cross St, Birmingham, Reference: "Wrightson's Annual Directory of Birmingham, 1829-30", p.4, p.122 under Casters.
1830	Joseph Askey, brass caster, Old Cross St, Birmingham, Reference: 'The History, Topography and Directory of Warwickshire, by Wm. West, 1830', p.304, p.422 under Casters.
1833	Joseph Askey, brass caster, Old Cross St, Birmingham, Reference: 'The Directory of Birmingham, Wrightson and Webb, 1833', p.4
1835	James Askey, brass caster, Old Cross St, Birmingham, Reference: 'Pigot and Co.'s National Commercial Directory for 1835', p.504, p.541 under Casters.

What can we conclude from all of this?

Over a short period of approximately 5 years, from dates known 1829 to 1835, J. Askey, brass caster, advanced the style and labelling of his sovereign rockers from his original 'ASKEY'S' name stamped on the poise.

He did this by adding an Askey's flower stamp and then replacing the flower with the Askey's crown stamp, perhaps in response to the use of crown stamps by other Birmingham sovereign balance makers to identify their products. Or perhaps the crown stamp came first and the flower on the poise was a special stamp to celebrate the new Birmingham Botanical Gardens and Glasshouses opening about 1832.

Next, Askey started to advertise on his rockers, using an 'ASKEY'S IMPROVED' stamp along with the Askey's crown and put the stamps on both the poise and the previously blank base.

Then, perhaps in response to other makers in the market starting to claim steel bushings, he added the 'BUSH'D' stamp on the beam. About this time Askey also introduced a nickel-plated version of his 'BUSH'D' rocker, but with 'SOVEREIGN WARRANTED' around the Askey's crown stamp on the base. This was the more common base labelling style of the time. Finally, Askey's introduced a rocker version with a bevelled edge on the poise, the first non-labelling change to his rocker style.

All of this was done with no other changes to the basic rocker design or platter labelling. Perhaps all of these poise, base and beam labelling changes were in response to market pressure and the demand for sovereign rockers?

Acknowledgements

Special thanks to Diana Crawforth-Hitchins for her assistance.

Thanks also to Stan Carthew of Australia for the photo of his nickel-plated Askey's rocker.

Notes & References

1. Reference my forthcoming Book: *Sovereign Balances 2 - Standard and Non-Standard Rockers and Crowns.*

Showcase

Figure 1. ➤ The letter plates on this British roberval postal are embellished with green and pink enamel. The gilded scale is marked J.N. Noyes, 69 Tunbridge Wells, one of 83 retailers of S Mordan scales. The oval base measures 5 1/2" by 3 1/4" and has 2 oz and 4 oz weights.

Larry Press Collection



Figure 2. ➤ The letter plate on this boxed roberval postal scale is marked Waterlow & Sons, Manufacturers, London. The base measures 10 1/4" by 5" and the scale is 5" tall. The eight original brass knobbed weights are marked 8 oz/16P, 4 oz/8P, 2 oz/4P, 1 1/2 oz/3P, 1 oz/2P, 1/2 oz/1P, 1/3 oz, and 1/4 oz.

See EQM pages 1479-1488 and 2998-3006 for more information on Waterlow.

Peter Laycock Collection.



History of H. Fereday & Sons Ltd.

Scalemakers 1840-2010

BY DAVID MATTHEWS

The Company's history is interwoven with the Fereday family who have their origins in the Midlands. The name is derived from Ferrous, another word for iron, and it is believed that the Feredays some 170 years ago were involved in the emerging enamelled ironware industry, selling their ferrous wares by day, hence Fereday.

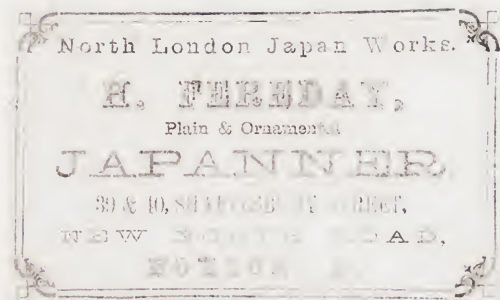


Figure 1. Fereday company trade card, circa 1873.

In 1840 a John Fereday, the great-great-grandfather of the present incumbent David Fereday, journeyed to London to seek fame and fortune. He started business in Goswell Road in The Angel Islington, LONDON N7, (where many years later Stevens Scale Co would also have a scale company.) At this first address they carried out Gold Leaf decoration work and supplied grocers' sundries, such as tea canisters. Tea, at that time a very expensive luxury, was kept in tin-lined canisters made of very expensive woods with a lock. His son, Henry, in his late teens, branched out on his own doing

similar work, and it was from him that the present company name survives. The original H. Fereday started business in City Road, The Angel Islington, London N7 and in 1870 moved to Shaftesbury Street, New North Road, HOXTON, London.

During the next nine years six children were born, John, Henry, William, Walter, George and Kate. Henry, the first child, died in 1881 at the age of 29, and his wife carried on the business. At that time the firm employed ten people engaged in enamelling and gilt decoration work. The five brothers when aged thirteen (school leaving age at the time) started work. By 1889 the business had expanded to undertake sheet metal work.

The only involvement with weighing machines at that time was in the enamelling and decoration of scales for other scale makers. In 1894 the business made further progress in opening up a shop-fitting department, followed in 1900 by the manufacturing of scales. These various activities gave each of the Fereday boys their own department to run, Mr. Henry (The 2nd Henry) the enamelling department, Mr. William the Sheet Metal Department, Mr. Walter aided by Mr. George the shop fitting department, and Mr. John the office and administration. There appeared to be no Fereday directly in charge of the weighing section.



Figure 2. Henry Fereday Senior, Age 25, 1877.

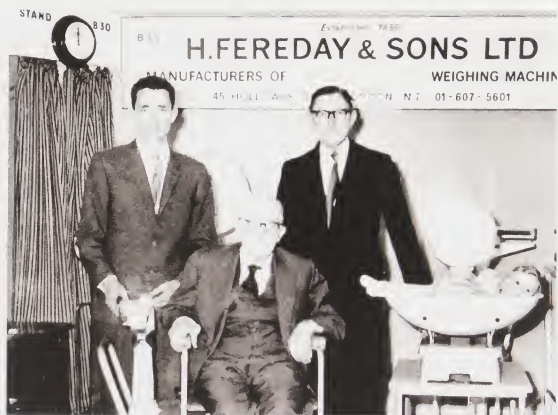


Figure 6. This photo, taken in 1967, shows four generations of Feredays. Mr. Henry, centre, son of the original H. Fereday was well into his 90s. Cyril Fereday, David's father age 63, is at right. The baby, in the scale, is Wendy Fereday at 6 months and her father, David, present Managing Director is at left.

(Extracted from the 1979 in-house Newsletter) :

The firm is basically divided in to five sections. Weighing Machines, Catering Equipment, Sheet Metal Work, Enamelling and Administration, (encompassing warehouse and distribution)

Despite being told the country is in recession, H. Fereday & Sons continues to be busy in all departments.

The weighing machine section is midway through a 600 unit order for Person Weighing Scales for Nigeria. The kitchen scale business continues to boom, following the advertising in the Observer Christmas Catalogue, Good Cooking Magazine and upcoming Sunday Telegraph and Observer Special Cooking Supplements."

The Catering Equipment Section is maintaining a good level of orders even though this section is more susceptible to the ups and downs of the country's economy.

The enamelling department deserves a mention of high praise as it has to absorb all that is thrown at it – or else !!

This is a timely reminder that in a time of bad business predictions our prosperity depends on the quality of our design, workmanship and service. We have to fully gather the confidence of customers, who are basically the people who keep us in work.

At this time the company had invested heavily in new tooling for an updated kitchen scale range (The Queen range) making use of die cast alloys and high quality production techniques, enabling larger production quantities, much improved finish and with a better product and faster deliver times.

At the same time they had redesigned the Person Steelyard and also Ratio Counting Platform scales and were developing their first Digital Industrial Weigher, by this time (1979) it had already obtained Trade Approval from Weights and Measures departments.

This increased production and profit led to improvements in the factory buildings, Offices, Canteen, and staff facilities.

Staff News:

A list of employees with over 25 years service in 1979 and the retirement of Miss Poly Hayes after 65 years with the company in 1978 – a record yet to be surpassed!!

<i>Bill Newman</i>	<i>53 Years</i>	<i>Eddie Quinlan</i>	<i>46 Years</i>	<i>Fred Holmes</i>	<i>43 Years</i>
<i>Lew Newman</i>	<i>41 Years</i>	<i>Bessie Whitton</i>	<i>38 Years</i>	<i>Johnny Wright</i>	<i>34 Years</i>
<i>Tom Barfoot</i>	<i>34 Years</i>	<i>Mrs Holley</i>	<i>33 Years</i>	<i>Bill Cambell</i>	<i>33 Years</i>
<i>John Garwood</i>	<i>31 Years</i>	<i>Fred Boulton</i>	<i>28 Years</i>	<i>Arthur Feneron</i>	<i>28 Years</i>

The Company at this time employed 53 people including 9 at the Albion works in Birmingham, and had lost 146 days in 1979 due to absenteeism, an average of 3 days per person, and congratulations to those 13 staff with 100% attendance.

“For 1980 the holidays are as follows: Annual entitlement will be increased from 20 to 22 working days.

The Company will be closed on the following dates:-

GOOD FRIDAY 4TH APRIL 1980

EASTER MONDAY 7TH APRIL 1980

MAY DAY 5TH MAY 1980

SPRING BANK HOLIDAY MONDAY 26TH MAY TO FRIDAY 30TH MAY 1980

(4 OF THESE DAYS AGAINST ANNUAL ENTITLEMENT)

SUMMER BANK HOLIDAY MONDAY 25TH AUGUST 1980

CHRISTMAS & NEW YEAR THURSDAY 25TH DECEMBER TO FRIDAY 2ND JANUARY

(3 OF THESE DAYS AGAINST ANNUAL ENTITLEMENT 1980)

(1 DAY AGAINST ENTITLEMENT FOR 1981)

“This leaves 14 or 15 days of annual entitlement to be taken at choice.”



Figure 8. ↗ Baby weighing machine, with Board of Trade certificate 1451, for Oct 5th, 1966. Issued to H Fereday & Sons Ltd, 45 Holloway Road, London N 7, using one of Fereday's trade names, Weylux. The writing on the scale says "The Supreme. WEYLUX. To weigh 41 LBS. For weighing babies only". It was suitable for trade. The baby was not traded, but the scale was used in a Chemist's shop, and the mother paid the chemist to weigh the baby regularly.



Figure 9. 1984 architect's drawing showing refit to Holloway Road factory.



Figure 10. Finished facade in spring 1984.



Figure 11. The current Weycat Factory in Harlow Essex since 2006.

Mancur - Hide Scales - Mond Waage - Peson -. C. Unser

BY REIN KOK

All of these are different names for the same type of scales. You can find more names in EQM page 1863. The most common type is the oval one with suspension rings and two hooks (fig. 1a-1b). In Europe these scales often bear the maker's name on the graduated arc. Most of them are made in France or Germany.

Figure 1a. ∞∞ This mancur is marked W. Kleuser on the side that is graduated in multiples of four from 0 to 36.



Figure 1b. ∞∞ The opposite side is marked RS and PUD and is graduated in multiples of twenty from 20 to 360.



Figure 2. ∞∞ The large mancur is marked Lebreton Eugene, measures 43 cm and is graduated from 0 to 175 Kg. The small mancur is marked H. SCH, measures 15 cm and is graduated from 0 to 15 Kg.





Figure 3. ▲ ▲

The brass quadrant is stuck in a crack in the spring. There's no name or mark on it. Note, the hooks have a nice elegant shape.

Fig.1 is a strange one: on one side (fig.1a) is the name "W. Kleuser" and on the other side are the initials "RS" and the word "PUD" (fig.1b). PUD is a Russian commercial weight. I don't know the meaning of the abbreviation "RS". In EQM 1875/76, it is said RS means "Régnier a Semur," but two names on the same pair of scales seems strange to me. Maybe RS has a connection with Russian.

Fig.2 shows two scales each with one ring and one hook. The small scale is lying inside the tall one. The tall one has an overall length of 43 cms and bears the maker's name "Lebreton Eugene". The graduations are 0-175 kg. The small one is only 15 cm long and has the initials "H.SCH". The graduations are 0-15 kg.

A third type (fig.3) has one ring and two hooks. It's a handmade one and very old; the fastening of the hooks is primitive. One side is graduated 0-35 Pfund and the other one 25-80 Pfund. Pfund is an old German weight of 500 grams.



Figure 4. ▲ ▲

Fig.4 is a trapezium-like scale with one ring and one hook. The graduation is 0-25 kg and has an overall length of 32 cms. The name on the dial is "Le Termelier a Sourdeval". Sourdeval is a village in France about 100 km south of Caen. The name "André le Termelier" is often found on old French scales. This scale dates between 1800 and 1815.

Fig.5a-5b shows a scale with two rings and hooks, so with two sets of graduations: 0-78 livres and 0-150 livres. Livre is an old French weight for half a kilogram. The scale is dated 1780 (fig.5a) and bears the maker's name H.Boelle (fig.5b). Boelle was a scale-maker in St.Christophe, a village about 60 km north of Poitiers. The scales of this type made by Boelle are all dated between 1775 and 1795.



Figures 5a & b. ▼ ▼





Figure 6a. / /

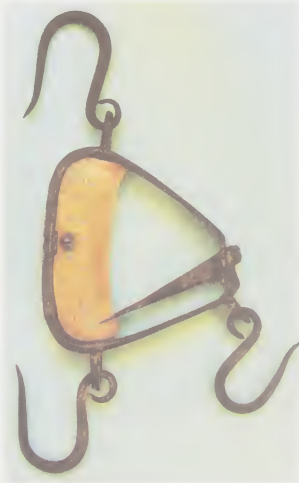


Figure 6b. / /



Figure 6c. / /

Fig.6a is a triangular scale with three hooks. The graduation on one side is 0-30 Pfund with the capital "K" (Krämer = market-vendor). The other side is graduated 10-120 Pfund and decorated with waves (fig.6b). Sometimes you see at this side the capital "F" (Fleischer = butcher). The initials HPT are visible in the flat upper part of the spring near the suspension ring (fig.6c).



Figure 7. \ \



Figure 8. / /



Other nice scales are the circular ones with a C-spring. They are made in France. In EQM issue 4-2009, Stephen Burnett wrote about these scales. In his collection was a scale of "Lebreton, fils ainé a Sourdeval", which was graduated in AR. In my collection is one with the same name, but graduated in KG. Other scales of this type in my collection are of "HANIN": one with a graduation in "ancien poids" (fig.7) and another one with a double graduation in "Anc.Pds"(ancien poids) and in Kylog(rams) (fig.8). When you compare these scales you observe an ancien poid is about half a kilogram. Ancien poids was used about 1800 and before. The scale in fig.8 was used during the transition period between 1800 and 1812. Fig.9 shows a nice scale also with the name "Boelle" and it is dated 1820.

Figure 9.

Avery Counting Scales

Reply by D F Crawforth-Hitchins to Ben Smith's queries, "What have I got? How was it used? When was it made?"

These counting scales are nice (Figure 1), aren't they? They were used by shop-keepers and manufacturers to weigh out small items quickly. Who wants to count out 144 screws? Much quicker to pop one screw in the pan and see what 144 will weigh, then go to your big scale, set it at the same reading as you've got on your computing scale, and just pour screws into the pan until it balances. You had 1 gross. Try it! I was quite surprised when I weighed my pen (Figure 2a & 2b).



Figure 1. Ben Smith's Computing Scale by W & T AveryL".

Or, if the customer wanted 4 gross, put four screws in the pan, and read off what four gross will weigh. I said screws, but it could be buttons, widgets, candy or anything small.

I said gross, but people could get them graduated for dozens or 100s or anything you asked Avery to set it at. Very useful tool!

Going through the early Avery catalogues, the first example of your scale appears in their catalogue of 1912 (Figure 3). I was interested to see that it was labelled "PATENT" but I have no record of this patent. I will try to obtain a copy.

The 1912 catalogue reads *SPECIALLY SENSITIVE* and certainly I found it difficult to put the poises to exactly the right position, as the beam rocked up and down. I cannot explain why it was called a *Costing Balance*. If it was graduated in sterling per gross, all the items weighed, regardless of size, would have to have the same



Figure 2a. ♣ ♣ W & T Avery Ltd Estimating scale. This example is set to estimate the weight of 1 gross of pens (11b 2oz).

value per pound. Maybe one of our members can explain this.

I searched my Board of Trade Notices, wondering whether they would give me a date for the patent. I was surprised to find that Averys got a certificate for their use for trade purposes as late as December, 1921 (Figure 4). Why the delay? The scales were originally offered for use in calculating the weight of one gross, and not for *selling* a gross, so technically, the Board of Trade would not have been involved. The certificate was only needed if the gross of items were to be *sold*.

Naturally, your question raised my interest in Counting Scales made by Avery. I looked at my catalogues to find out when they were first manufactured. The earliest example I could find was in their catalogue of 1880, called a Computing Scale. Probably they were made before 1880, but I have no evidence to prove that. Avery seems to have had trouble deciding what to call these balances; they called them Counting, Estimating, Costing and Computing Scales in various catalogues!

The 1880 illustration is of poor quality, so I photographed my example (Figures 5a, b & c). Mine is not actually labelled W & T Avery, but I have seen examples labelled, so I am confident that it really is by W & T Avery. It bears the name of W G Bloore on the ivory index, a known retailer of Avery estimating scales.

The Avery catalogue of 1880 calls their early version a *Computing Balance for ascertaining the weight of grosses of articles by the weight of one article, complete with scale. No loose weights.* They also offer it as a *Paper Balance for estimating the weight of a ream by the weight of one sheet, complete with scale. No loose weights. 1 lb to 120 lb.* When they say *Complete with Scale*, I think they mean complete with a graduated ivory strip. (That is one of



Figure 2b. ♣ ♣ The bifurcated beam has graduations on the angled rear arm for pounds per gross, and the front arm has graduations for ounces per gross. By using the two arms together, a good estimate of the weight of 144 items could be ascertained.

Figure 3. ♣ The first documentary evidence I found for Ben's scale, in the Avery Ltd catalogue of 1912. The top illustration is of one 15½ inches long with a maximum estimation of 10 lbs, the same as my example. The lower illustration is for a much chunkier version, that is 23 inches long, with a maximum estimation of 145 lbs.

the problems with the word "Scale", it has so many meanings! Here it means Graduated Scale, but it can mean the whole apparatus for weighing, or it can mean the flakes of ivory, horn or wood used to sandwich the handle on a pen-knife or cutlery blade).

The Avery catalogue of 1885 has expanded the definition to *Computing and Letter Balance Combined*, without altering the design. By 1906, the same Balance was still being offered, but with an optional extra of reading out in both grosses and dozens, on the same strip of ivory, at 10 shillings extra. It was *Made in various sizes, and with various fittings, to suit different articles. Send full particulars of requirements or Samples of articles to be counted, and we will submit the most suitable machine.*

Averys had obviously been getting complaints that the customer needed two scales to complete the process, and so they brought out a double steelyard that concentrated the process onto one machine by 1912. It is larger than most collectors would wish to house. It could be fitted with a flat pan for weighing post cards, labels, sheets etc.

They produced various configurations of various capacities. A particularly sensitive version produced in 1912 counted only twelve of the items. Why produce a scale when it would not take long to count twelve out by hand? Was it because the items were so small

Figure 4. ♣ The Board of Trade issued certificates if they had tested a scale, and found it to be 'not such as to facilitate the perpetration of fraud when used in factories and workshops for determining the weight of small articles by the gross'. This computing scale was to be classified as a Class B scale of 1 lb capacity.

The "Avery" Estimating or Costing Balance

SPECIALLY SENSITIVE.



No. 345 A.

THE weight of a Gross is indicated when 1 Article is placed in the Pan. Saves Time in Estimating and avoids mistakes.
Capacity ... Zero to 10 lb. per Gross by 1 dram divisions.
Over-all dimensions ... 15½ × 8 in.

No. 345 B.

Capacity ... Zero to 145 lb. per Gross by ½ oz. divisions.
Over-all dimensions ... 23 in. × 12 in.

We strongly recommend that these Estimating Balances should be enclosed in Glazed Mahogany Case, as below, for protection and to ensure specially accurate readings.

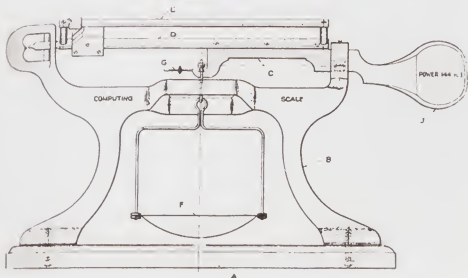




Figure 5a. // The earliest estimating scale made by W & T Avery, as shown in their 1880 catalogue. It has a capacity of 4oz when used as a conventional postal steelyard reading the graduations on the brass beam, and with an estimating range of $\frac{1}{4}$ lb per gross up to 36lbs per gross, reading on the ivory scale. It seems peculiar to us that the good-quality mahogany base was covered over with ox-blood paint, but it appears to be original. It not only bears the name W G Bloore, but also has a transfer (decal) on the base for the Midland Scale Co. It is difficult to understand why a Birmingham customer would go to a third party to buy his scale, when Averys and Bloore had already taken a profit.

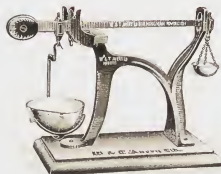


Figure 5b. // Transfers are not common on bases in the UK. An ivory plaque or a brass fillet screwed onto the wood was more usual. The transfer reads Midland Scale Co, Birmingham.

Figure 5c. // W G Bloore had the ivory stamped before the scale was assembled. This example is on a scale like 5a, but is graduated up to one ounce only on the brass beam.

Sensitive Counting Balance.

FOR VERY SMALL ARTICLES.



No 354.

Maximum Load 8 oz.

SPECIALLY Sensitive Counting Balance for the **Quick and Accurate**
Counting or Weighing of Quantities of Small Articles.

One Article placed in the Small Pan represents 12 in the Scoop.

The Balance has an extremely **Sensitive Brass Beam** with **Agate Bearings**,
Brass Scoop and Fittings, **Japanese Iron Stand** on **Mahogany Base**.

ADVANTAGES —

- Saves Time.
- Saves Money.
- Counts Accurately.
- Pay for themselves over and over again.



Figure 6. W & T Avery Ltd catalogue of 1912 shows this Sensitive Counting Balance. The red cartouche at the bottom was stamped into the catalogue for all their computing scales. A nice catch-phrase!

Figure 8. W & T Avery Ltd Combination Counting Machine in their catalogue of 1916. An ordinary estimating machine like yours cost £16..10s. This machine cost £26, a much bigger investment.



Figure 7. W & T Avery Ltd catalogue of 1912. The start of a new range of computing scales that evolved into the example in Figure 9.

and fiddly that the user was happy to have a scale to do the job? Or was it because the user was tediously making up packets of one dozen items numerous times? See Figure 6. Avery produced a small, flat version called the Patent Estimating Balance for Jewellers etc. (Figure 7) for very small Articles to indicate the Weight of a Hundred and a Gross of Articles when one article weighing between 5 grains and 10 grains is put in the pan. The ivory index has been laid flat on the beam, making it easy to read, and destined to lead on to a new design, (shown in Figure 9a & b).

In 1916 Avery produced a Combination Counting Scale, that counted "*in (1) grosses*"





Figure 9a. ▲▲ This W & T Avery Ltd estimating scale folds down into its box which is 240 mm (9.75 inches) long, forming a neat travelling set. It has no rest at the rear, so was impossible to photograph in working order until I put a pen on the plate. Now I know that 1000 of these pens would weigh 19 lbs 9 oz! The index was no longer made of ivory, but the red infill in the numbers was a reasonable substitute.



Figure 9b. ▲▲ W & T Avery Ltd registered this trademark in October 1890, and used it for many years thereafter. In the caption to Figure 5b, I referred to the uncommon use of a transfer on wood, and here is a second example, admittedly being projected within the box.



(2) in dozens (3) in grosses and odd dozens. If specially ordered can be supplied counting tens and hundreds instead of dozens and grosses". See Figure 8. This was one of 23 counting machines offered by Averys in 1916, and that number does not include the special variations that could be supplied if ordered. Some of this expansion should be attributed to the War Effort during the First World War.

To round off this reply to Ben's question about his counting scale, I include a travelling estimating scale (Figure 9a & b) that was given to Michael Crawforth by Jaap Visser, that I have been unable to date because I have not found it in a catalogue.

It has the same flat beam as the jewellers' balance in figure 7, but the graduations are not on ivory but stamped into brass. Was ivory scarce during the war, or were Averys becoming aware that elephants were dying unnecessarily to provide ivory? The use of aluminium for the poise might suggest that it was made as late as WWII. I am happy to introduce it to a wider audience as Michael considered this scale one of his most interesting.

Showcase



Henry Troemner of Philadelphia, Pennsylvania manufactured this estimating scale for ascertaining the weight or cost by pound of one gross or 100 items based on a sample. It is described in the 1927 catalog as follows: *For estimating cost of quantity by weighing a single piece. With this Estimator the correct weight of quantity will be shown at a glance. No time lost in figuring and no errors can occur.*

To operate, place the article on the Scale pan, slide the poise along the beam until Scale balances, which will indicate the result in pounds, ounces and fractions of ounces, how much material will be needed per 1000, 100, gross or dozen. Scale will weigh from the smallest sample up to one pound.



This Avery Solder Computer is similar in design to the estimating scales shown in the previous article. It was manufactured to be used to ascertain the percentage of tin and lead in solder.

Kurt Beyreis Collection



ISASC

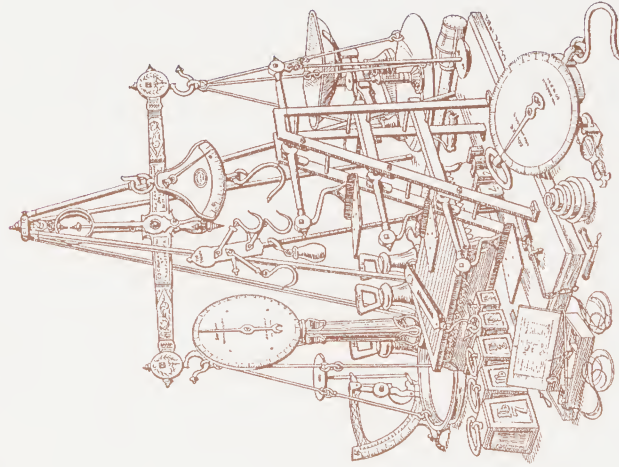
QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

MAY 20 - 24, 2010

CONVENTION ISSUE

PORTLAND, OR

®





ISASC CONVENTION SITES

1979	San Francisco, CA
1980	London, England
1980	New York City, NY
1981	Delft, The Netherlands
1983	Sindelfingen, West Germany
1984	Chicago, IL
1986	Washington, DC
1986	Paris, France
1987	Anaheim, CA
1988	Boston, MA
1989	San Francisco, CA
1990	Philadelphia, PA
1991	Chicago, IL
1992	San Diego, CA
1993	Baltimore, MD
1994	San Francisco, CA
1995	Hershey, PA
1996	New Orleans, LA
1997	Los Angeles, CA
1998	Toronto, Canada
1999	Atlanta, GA
2000	Seattle, WA
2001	Chicago, IL
2002	Pittsburgh, PA
2003	San Antonio, TX
2004	Minneapolis, MN
2005	Washington, DC
2006	San Francisco, CA
2007	Dearborn, MI
2008	Chattanooga, TN
2009	Kansas City, MO

Welcome
to the
Thirty-Second Convention
of the
International Society
of
Antique Scale Collectors



May 20-24, 2010
Monarch Hotel & Convention Center
Clackamas, OR

P R O

THURSDAY, MAY 20, 2010

2:00 P.M. - 5:00 P.M.
CONVENTION REGISTRATION • LOBBY AREA

5:30 P.M. - 9:30 P.M.
TOUR & DINNER AT MUSEUM OF THE OREGON TERRITORY
Bus loads at main entrance at 5:30 P.M.

FRIDAY, MAY 21, 2010

9:00 A.M. - 2:00 P.M.
EVERGREEN AVIATION MUSEUM TOUR
Bus departs main entrance at 9:00 A.M. • Box lunch provided

9:15 A.M. - 5:15 P.M.
PITTOCK MANSION & EVERGREEN AVIATION MUSEUM TOUR
Bus departs main entrance at 9:15 A.M. • Box lunch provided

3:00 P.M. - 5:00 P.M.
CONVENTION REGISTRATION • LOBBY AREA

6:30 P.M. - 10:00 P.M.
COLLECTOR'S GET-TOGETHER • OFFICIAL WELCOME
ALBUM-SHARING • DISCUSSION OF WEIGHTY MATTERS
Hors D'oeuvres Buffet • Sandy & Willamette Rooms

SATURDAY, MAY 22, 2010

8:15 A.M.
2010 GERMANY TOUR MEETING
Clackamas Room

9:00 A.M. - 12:00 NOON
CONTINUING EDUCATION - MORE WEIGHTY MATTERS
Coffee Service 10:30 A.M.
Clackamas Room

"IMPACT THE LEWIS AND CLARK EXPEDITION"
Harmony Gerner, Historian, Cruise West

"CONTINENTAL ROCKERS IN THE 20TH CENTURY"
Judy Vining

R A M

"EBAY - A SELLER'S VIEW"

James Reeve

"ASHANTI, AKAN AND AFRICAN MINIATURES REVEALED"

Ruth Willard

12:30 P.M. - 1:30 P.M.

LUNCHEON BUFFET

Sandy & William's Rooms

2:30 P.M. - 5:00 P.M.

SILENT AUCTION & LET'S MAKE A DEAL

Coordinated by Eric and Judy Soudis

Marion Hall

6:30 P.M. - Till...

THE PORTLAND ROSE RECEPTION AND BANQUET

Sandy & William's Checkmate Rooms

SUNDAY, MAY 23, 2010

9:00 A.M. - 12 NOON

Coffee Service 10:30 A.M.

Checkmate's Room

SHOW AND TELL

Special treasures from our members • Moderated: Jeremy Katz

BUSINESS MEETING

Officers reports, their discussions and comments

12:30 P.M. - 2:00 P.M.

LUNCHEON BUFFET

Sandy & William's Rooms

MONDAY, MAY 24, 2010

9:00 A.M. - 5:00 P.M.

TOUR TO MOUNT ST. HELENS NATIONAL VOLCANIC MONUMENT

Bus departs from entrance at 9:00 A.M.

Lunch at Five Mountain Grill

4:30 P.M.

Bus stops at Portland International Airport

SEE YOU NEXT YEAR IN DENVER, COLORADO!

IN ATTENDANCE*

Charley and Dawn Amsbaugh, Westminster, Maryland
Steve and Kathy Barnett, Ellicott City, Maryland
Steven and Karen Beare, Wilmington, Delaware
Ralph Bergmann and Patricia Williams, San Rafael, California
Jane and John Bersch, Medford, New Jersey
Kurt and Ann Beyreis, Alexandria, Virginia
John Bladholm, Bend, Oegon
John and Betty Cheeseman, Dorset, England
Norman and Phyllis Cima, Menlo Park, California
Dick and Peggy Clark, Happy Valley, Oregon
Jim Dietrich, St Charles, Michigan
William and Mary Ellen Doniger, Berkeley, California
Mary Easton, Downers Grove, Illinois
Leslie Firth, Mercer, Pennsylvania
Robert Foster, Dayton, Nevada
Joe and Carolyn Ghilarducci, Lakewood, Washington
LeRoy and Cleo Gossett, Ephrata, Washington
Carol and Bob Hayden, Austin, Texas
Gregory and Judy Hill, Mira Loma, California
Irving Isicoff, Ocala, Florida
Arline and Bill Jacobson, Bayside, New York
William and Nancy James, Orinda, California
Robert Jibben, Minneapolis, Minnesota
Jerome and Mary Katz, Rockville, Maryland
Peter and Dian Laycock, North York, Ontario, Canada
Don and Diana Low, Mercer Island, Washington
Clifford and DeVee Lushbough, Aurora, Colorado
Jan and Eva Macho, La Canada, California
Clem and Katharine Monday, Oroville, California

*

** Names of members attending their first convention are in italics*

IN ATTENDANCE*

Greg and Beverly Moss, Waterford, Michigan

Mary Anne Murphy, Pittsburgh, Pennsylvania

William Parsons, Albany, Oregon

Gale Plummer, Portland, Oregon

Joan Pugsley, Three Rivers, Wisconsin

Dale and Donna Reed, San Leandro, California

Utz and Shirley Schmidt, Palms, Michigan

Don and Donna Schoenly, Glen Ellyn, Illinois

Shirley Silva, Danville, California

Ben and Mary Smith, Jackson, Michigan

Eric and Judy Soslau, Austin, Texas

Lorraine Texeira and Mary Krause, Pleasanton, California

Jaap Visser, Haarlem, The Netherlands

Phil Wehman, Chattanooga, Tennessee

Ruth Willard and Gayle Higaki, San Mateo and Oakland, California

Charles Yarton, Lake Oswego, Oregon

Jack Young, Beaumont, California

Jaclyn Young, Del Mar, California

CONVENTION NOTES

1. Bidder numbers for the Silent Auction are on the back of the name tag. Please wear tag to all events. If a seller needs additional bid sheets, contact Bob Jibben.
2. Be sure to bring your MEAL TICKET to each applicable meal.
3. Attire: Casual for days and evenings. Dress-up suggested for Saturday night banquet.

CONVENTION COMMITTEE

Dick Clark - Chairman

Jan Berning, Carol Hayden, Bill James, Bob Jibben,

Eric & Judy Soslau



Founded September, 1976

3616 Noakes St. • Los Angeles, CA 90023 • USA

Officers 2010

President.....	Peter Laycock
Vice Presidents.....	Bill James
	Robert Jibben
	Jerome Katz
	Mary Anne Murphy
	Shirley Schmidt
Secretary.....	Carol Hayden
Treasurer.....	Kurt Beyreis

Executive Secretary.....	Jan Macho
--------------------------	-----------



A Balanced View

Welcome to summer 2010! We have just returned from the convention where we had a wonderful time reconnecting with many of our 'Scalie' friends. Plans are now underway to move to the lake to enjoy beautiful Muskoka, where later in June the G8 meetings will be held, not too many demonstrators I hope.

Well, what a proud ISASC grandfather I am. My seven year old granddaughter Caitlyn goes to the Deer Run Elementary School in Dublin, Ohio. Recently, her class was learning how to measure in their math lessons. Seizing the opportunity Caity took a little postal scale, which I had given her, to school to demonstrate how scales are used. She and her classmates measured many of the small items one finds in the classroom. Here is a picture of Caity and her teacher, Ms. Lindsay Cooper. Last year my son Greg, Caity's father, joined ISASC and now has a collection of about thirty scales, mostly postal. With Caity's initiative with her classmates we now have three generations of the Laycock family actively involved with ISASC. Who knows, some day she may be a candidate for Show and Tell at one of our annual conventions. Thanks, Caity!



Portland 2010 ISASC Convention

The Portland convention was an overwhelming success. Our hosts Dick and Peggy Clark did a terrific job. Seventy-seven of us converged on Portland for this our thirty-second annual convention. The Museum of the Oregon Territory, The Evergreen Aviation Museum and the Pittock Mansion were outstanding and



well worth the visit. The customary Saturday and Sunday activities provided us with an opportunity to hone our scale collecting interests. The Silent Auction was particularly successful with many top quality items available for the winning bidders. A wide variety of ten interesting and unique scales were demonstrated during Show and Tell on

Sunday morning. As always the best part of the convention was being able to be with good friends. The convention next year will be in Denver, Colorado. Our hosts, Cliff and DeVee Lushbough, have plans well underway. Cliff will be sharing further details early in the New Year. It is sure to be another not to be missed ISASC event.

Poor Jan

You may not have heard that EQM Editor Jan Berning earlier this year slipped on the ice and severely broke her ankle in four places. She has been convalescing at home for several weeks and is now just getting to the stage where she can put some weight on it. For those of you who may have met Jan you will know that she doesn't do 'sitting still' very well. She and Bill could not come to the convention this year making it only the second time in twenty years that they have missed it. Jan works very hard and does a superb job of getting EQM to us once a quarter. We wish her a speedy recovery. I know she would be glad to hear from any of you and she can be reached at jhberning@comcast.net.

Trip to Germany

Utz Schmidt reports that the plans for the trip to Germany this fall are well underway and so far 35 enthusiastic 'Scalies' have signed up. We will be spending 10 days in Germany looking for scales and visiting several collections. It doesn't hurt that Germany is the beer drinking capital of the world and that we will be there during Oktoberfest. Utz and Shirley Schmidt are attempting to tutor us in German, so we at least can order a meal. I am told

however that in most parts of Germany you can get by with English. There may still be an opportunity to sign up. Utz can be reached by email at uschmidt@avci.net or you can give him a call at 810-376-4438.

The ISASC Collection

Recently, the ISASC Collection Committee and the ISASC Board met in Pittsburgh to dedicate a full day to review and refine the future course for the collection. Since its beginning almost ten years ago the collection has grown thanks to the generous donations of many ISASC members. The collection is housed in a climate controlled facility in Pittsburgh. The committee has worked hard to ensure that each gift is safely transported,



received, recorded and displayed. Prior to our meeting we all visited the collection to see first hand the excellent work that the Collection Committee has achieved. What started as a small initiative has grown into a very impressive collection. With the success we have had over the past ten years we can anticipate that the collection will continue to grow as a number of our members choose to donate their scales to ISASC. The

facility we have is already full and soon we will require additional space. It was with this in mind that we decided to dedicate a day to help Mary Anne Murphy and her committee to map out the future for the collection. A full day was spent at Mary Anne's house refining a vision and developing a framework for a strategy and future plans for the ISASC Collection. The session was very thoughtful, spirited and successful. The group reached a consensus for the path forward. Currently, a plan is being developed and documented for presentation to the



membership. I would like to thank all those who travelled to Pittsburgh to participate in this important meeting.

The Doniger Collection

While out west I took the opportunity to visit Bill and Mary Ellen Doniger at their home in Berkley, California. Bill is one of the ISASC founding members and has been collecting scales for over



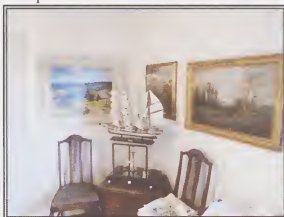
50 years. Bill has been very active in ISASC; he served for a number of years as a director and was the host



and principal planner of the first ISASC convention held in San Francisco in 1979.

As you might expect, he has one of the most impressive collections of scales in North America or perhaps even the world.

His collection of several thousand scales and numerous weights is proudly displayed in the Doniger home. Those of you who have met Bill will know his credo when asked about a special scale, "one is nice, but two is better". He is especially proud of his collection of coin scales and coin detectors. As you wander



through the Doniger home, you cannot help but be struck by the impressive collection of American art that they have assembled. There are also several other interesting and unique collections. Of particular interest are a collection of small wall menorahs and a collection of peace pipes. I want to thank Mary Ellen and Bill for being such great hosts on my whirlwind visit.

Leslie N. Firth Learning Center

ISASC member Les Firth has over the years been very active in his community of Mercer, Pennsylvania, where he and his wife Elaine continue to operate the family farm. Both are enthusiastic graduates of Penn State University,



especially during football season. A few years ago Les retired after a successful career spanning some 30 years, from Penn State, where he represented the University as a County Agent in the Western Pennsylvania area. Les has always had an interest in supporting education in his community and was instrumental in the establishment of The Mercer County Cooperative

Extension Learning Center and was its director from 1985 until his retirement in 1995. Penn State Cooperative Extension in Mercer County gives local residents easy access to the resources and expertise of the Pennsylvania State University. Through educational programs, publications and events, cooperative extension agents deliver unbiased, research-based information to Mercer County citizens. The Leslie N. Firth Scholarship in Agricultural Science at Penn State was established and endowed by the Mercer County Extension Association and Friends in 1997. The Mercer County Cooperative Extension Center was named the Leslie N. Firth Learning Center by Mercer County government in 1994 to recognize and honor his contributions. In 1992 he received the Distinguished Service Award from the Pennsylvania County Agents Association. Les is also very active with the local Dairy Herd Improvement Association, and has on several occasions exhibited his collection of dairy scales at their meetings. Les has been a very supportive long term member of ISASC and served six years as treasurer. Congratulations, Les, we are very proud of you.

Website

We are very pleased to announce the new ISASC website. After several months in development, there was a sneak peak of the website for those who attended the Portland Convention. Our old website served us for ten years, and was retired when the new website went "live" on May 30th. The initial comments of those who have browsed the site are very favorable. Please take the time to check it out and see what you think. Within hours after going online we had an inquiry from a person interested in becoming a member. Our

website has been a major member recruitment tool for the society and we feel that the new website has even greater potential in this area. Visit the website at www.isasc.org. The password to the Members area has changed. The new password is "steelyard". One suggestion for remembering the password is to include it in the title when you bookmark or add it to your favorites. Hope you enjoy exploring your new website!

Welcome To New Members

I would like to take this opportunity to welcome the following new members and encourage them to contact any of our members should they have questions.

Daron Torrens	Calgary, Alberta
Gale Plummer	Portland, Oregon
Roger & Stella Bladholm	Bend, Oregon
Richard Shepler	Duck River, Tennessee
Marvin Yagoda	Farmington Hills, Michigan

In Memoriam

We were very sad to receive the news that Rhoda Isicoff passed away on January 22, 2010. After joining ISASC in 1994, Irving and Rhoda attended their first convention in Hershey in 1995. From that time on they were regular convention goers. Over the years many of us came to know Rhoda as a very caring and friendly person who enjoyed accompanying Irving to spend time with other Scalies.

Regional Meetings

2010 Michigan Get-Together

August 21, Jackson, MI

2010 Midwest Weigh-In

August 28, Sycamore, IL

Well, I hope your summer is a warm one and that you get a chance to attend one of the planned regional meetings.



Peter Laycock,
President ISASC

MIDWEST SCALE COLLECTORS

You Are Invited to the 5th Annual Weigh-In



August 28, 2010

11:00 AM Until?

At

Bill & Jan Berning's Home

1233 Townsend St.

Sycamore, IL 60178



Plan on coming about 11AM and staying until the party is over at?

Lunch will be served so please bring a dish to share.

View scale collection(s). Two collections for sale. Bring your album, some scales to show or sell.

Please RSVP to Jan at (815) 895-6328 or Bill at (815) 784-3134 or by Email to JHBerning@comcast.net over

SYCAMORE MAP



OVER



EQUILIBRIUM[®]

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2010 ISSUE NO. 3

PAGES 3601 - 3628



Cover Picture

Featured on this issue's cover is a near mint condition Perfection Postal Scale. This extraordinary scale and other scales by patentee David Hallock are discussed in detail in several articles of this issue. The unusual construction, the uncommon mechanisms, and the short-lived firms of the four featured scales makes for some interesting reading on pages 3589-3600 of this issue. Through reprinted and new articles you can learn how they are constructed, what made them unique when they were first manufactured, and what makes them unusual and desirable for collectors today.

Its exceptionally rugged construction, combined with its not needing to be manipulated in any way, made this scale a very good choice for using in the US Post Office.

Contents

Weights & Scales in Bradford - I

Norman Biggs 3603-3607

Bourn's 31 Lionel Street 'Sovereign

Rocker' Foundry

Michael Foster 3608-3611

Why the Michigan Scale was a Great Seller

Utz Schmidt & Jack Young 3612-3616

Weight Depositing Scale

Michael Crawforth 3617-3618

American Machine Co. Perfection Scales

3619-3620

David Hallock & His Unusual Scales

Jan Berning 3620-3623

Perfection Postal Scale

3624

A Little Perfection, if you Please

Jerome Katz 3625-3628



EQUILIBRIUM is published quarterly in February, May, August and November.

© 2010 International Society of Antique Scale Collectors ISSN: 0893-2883

International Society of Antique Scale Collectors

Founded September 1976

Internal Revenue Service 501 (c) (3) EIN 36-2976411

3616 Noakes St., Los Angeles, CA 90023

Tel 323.263.6878 Fax 323.263.3147

www.isasce.org

Directors* and Officers 2010

President Peter Laycock*

Vice Presidents Bill James*

..... Robert Jibben*

..... Jerome Katz*

..... Mary Anne Murphy*

..... Shirley Schmidt*

Secretary Carol Hayden*

Treasurer Kurt Beyreis*

Executive Secretary Jan Macho

For membership information contact

Shirley Schmidt sschmidt@avet.net

5790 N. Lakeshore Rd. Palms, MI 48465

Published with the co-operation and support of

ISASC Europe

Founded October 1993

CHARITY COMMISSIONERS FOR ENGLAND & WALES No 1037558

www.isasce.com

Trustees* and Officers 2009-2010

Chairman Norman Biggs*

Secretary Thomas Allgeier*

Treasurer Ken Govier*

Membership Secretary Michael Robinson

Meeting Secretary Janet Scarratt

European Representative Jaap Visser

Publications Officer David Apps

Information Officer D Crawforth-Hitchins

Trustee Phil Holroyd*

For membership information contact

Michael Robinson, 18 Richmond Court,

Spital Walk, Boughton, Chester, CH3 5DA

Editor Jan H. Berning, Tel 815.895.6328 Fax 815.895.6328 JHBerning@comcast.net

Associate Editor: Clifford Lushbough Tel 303.366.5471 cplush@comcast.net

Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

Weights and Scales in Bradford— 1 BY NORMAN BIGGS

Bradford, in the south-west of Yorkshire, is an outstanding example of the enormous changes that occurred in nineteenth-century England. In 1801 Bradford was a market town with a population of 13,204. By 1851 the population had increased to 103,778, and by 1901 it was over 280,000. The growth was mainly due to the impact of mechanisation on the town's main trade, the making of woollen cloth. Indeed, Bradford was often referred to as 'the woollen textile capital of the world'.

This article is in two parts. The first part will describe how changes in local governance affected the arrangements for checking the scales and weights that were used in the retail trades. At various times Bradford fell under the jurisdiction of the justices of the county, the lords and ladies of the manor, and the corporation of the borough. The resulting changes are typical of developments that occurred throughout the country, and they can be traced by looking at the marks on the weights and measures that have survived¹. The second part of the article will describe some weighing instruments specifically related to Bradford's position in the wool trade. Here too it will appear that many items have survived to remind us of this important period in the history of the town and the entire nation.

Inspection and verification

The regulation of weights used in trade has been a problem since the Middle Ages. After centuries of ineffective legislation, an Act was passed in 1795 that required the justices in each county to appoint examiners of weights and measures. In the case of Bradford, the relevant 'county' was the West Riding, one of the three parts into which the geographical county of Yorkshire was traditionally divided for administrative purposes. But there were complications, because some areas were exempt from the county authority for certain special purposes, having retained rights granted to them in feudal times. After the Norman Conquest, a large part of south Yorkshire had been assigned to two families: the Warennes of Wakefield and the De Lacys of Pontefract. Their two areas had been purposely interwoven. By the 19th century the Wrenne lands were known as the Manor of Wakefield, and had become part of the Duchy of Lancaster, under the control of the Crown. The manor exercised jurisdiction over weights and measures in a large area of the West Riding, including Halifax, Dewsbury and parts of Huddersfield, a right that was retained until 1892. The De Lacy lands were known as the Honour of Pontefract, and here authority was mainly devolved to a number of small manors, one of which was the Manor of Bradford. In 1796 the Lordship of the Manor of Bradford was purchased by Benjamin Rawson, who thereby acquired control of the town's markets. It is not clear whether weights and measures fell under the jurisdiction of the manor at that time, although it is certain that they did so later.

The picture becomes a little clearer after more legislation on weights and measures was introduced in the 1820s and 1830s. Local authorities were required to have their own copies of the Imperial Standards, and to appoint inspectors to check the weights used in trade by comparing them with their local standards. The records of the sets of standards issued were carefully maintained, and many details have been published by Ricketts². The West Riding appointed 17 inspectors, whose divisions were based on the wapentakes, and 17 sets of standards were obtained. One division com-



Figure 1. Verification mark for the West Riding of Yorkshire, district 8, 1835 onwards.

MANOR COURT.—HELD AT THE MANOR-HOUSE.
 John Clegg, Esq., Steward. Office; Piccchall yard.
Borough Coroner, & Coroner for the Honor of Pontefract.
 Mr. Charles Jewison, Rothwell, near Leeds.
Coroner's Constable.—Mr. James Jowett, Court-house.
Inspector of Weights and Measures.
 Mr. George Coates. Office: Court-house.

Figure 2. Extract from Lund's Directory for 1856.

prised the wapentake of Morley, including Bradford. As there is no mention of standards being issued specifically for Bradford, it must be concluded that the divisional inspector was responsible for inspection in Bradford. That was William Baxter, who was also High Constable for the eastern part of Morley. The mark that he stamped on weights comprised a rose, the letters YWR, and the number of his district (Figure 1).

The first step towards a modern system of local government in Bradford was the conferment of the status of Municipal Borough in 1847. However, the corporation did not obtain standard weights and measures at that time, and the legal position remained unclear. In Ibbetson's *Directory of Bradford* for 1850 the aforementioned William Baxter was the only inspector listed. His address is given as the Court House, Hall Ings, which is also listed as the place where weights and measures were 'adjusted'. Baxter did not reside in Bradford, and it is possible that his activities in Bradford were carried out under the auspices of the Manor, although that would have been dubious, as the Manor did not have its own standards. The entry in *Lund's Directory* of 1856 does nothing to enlighten us, since the Manor, the Borough, and the Honour of Pontefract are all mentioned in the same section (Figure 2).

In 1860, at long last, there is some evidence of regularisation. In that year standards were issued to the Ladies of the Manor, Miss Mary Rawson and Miss Elizabeth Rawson, the daughters of Benjamin Rawson. *White's Directory* of 1861 says that Amos Bairstow was the inspector on behalf of the Manor, and this was repeated in the 1866 edition. Evidence that he did indeed verify weights on behalf of the Manor is provided by weights stamped with a star and the letters MB (Figure 3).

The MB mark is quite rare, because it was short-lived. It was clear that the manorial jurisdiction was an anachronism, and in 1866 responsibility for the markets, and for weights and measures, was transferred to the

borough authorities under the Bradford Corporation Act (29 & 30 Vict. c. 222). A new inspector, Joshua Horton, was appointed by the Corporation, and a new verification mark was introduced. The mark represented a boar's head, part of the crest of the borough, referring to a local legend about the killing of a savage wild boar in the vicinity of the town (Figure 4).

The rapidly-increasing size of the Borough must have created problems for Horton, and by 1871 he had an assistant. His immediate successors as chief inspector served only for a few years each, but around 1880 John Leach was appointed to the post, and he was to serve for thirty years. Leach's tenure of the office saw yet more great changes, both in Bradford itself and in the national framework for the



Figure 3. Verification mark for the Manor of Bradford, 1860-66.

regulation of weights and measures. The Weights and Measures Act of 1878 was a major piece of legislation, which collected and updated all previous legislation on the subject, some of it going back to medieval times. Among other things it introduced a uniform system of numbered verification marks, replacing the picturesque (but baffling) marks that had previously been used. Initially the numbers were not compulsory, and Bradford chose to retain its boar until 1892, when it adopted the number 14. (See Figure 7 below for an example dated 1907.)

Further relevant legislation was passed in 1888 and 1889. Bradford became a County Borough, a status that carried with it the obligation to operate as a Weights and Measures Authority, and it was required that new inspectors should pass a stiff examination in the theory and practice of weighing machinery. (I doubt very much whether most of today's A-Level students would pass the examination.) However, some of the old-established inspectors relied on a clause in the Act that allowed men to remain in post if they had been appointed before it became effective. John Leach was one of the longest survivors, and he continued to serve as chief inspector until 1911, when his death was recorded in the *Monthly Review* of the Weights and Measures inspectors.

The next chief inspector was Charles Place, who had qualified in 1903 in Warrington, where his father Elijah was the chief inspector. During the war of 1939-45, he was succeeded by W.J. Owen, who remained until the great reorganisation of local government in 1974, when the responsibility for weights and measures in Bradford passed to the new metropolitan county of South Yorkshire. Thus the wheel had turned full circle, and Bradford was once again, as it had been 140 years earlier, in the hands of the county authority for its weighing and measuring.

The trade in scales and weights

In the eighteenth century Bradford shopkeepers would have acquired their scales and weights from local blacksmiths, whitesmiths, and ironmongers. By the 1830s some supplies were being obtained from places with long-established traditions of scale-making, such as Birmingham. The impact of legislation, and the growth of the

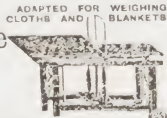


Figure 4. Verification mark for the Borough of Bradford, 1866-92.

HILL AND BRAYSHAW,
Weighing Machine
 AND
Scale Beam
MANUFACTURERS,
 DEALERS IN
Large & Small Weights of every description ;
SCALES & WEIGHTS REPAIRED & ACCURATELY ADJUSTED ;



ADAPTED
FOR
WEIGHING
BALES
AND
HOGSHEADS.



ADAPTED FOR WEIGHING
CLOTHES AND BLANKETS

VICTORIA BUILDINGS,
CHEAPSIDE,
BRADFORD,
YORKSHIRE.



ADAPTED
FOR WEIGHING WOOL.



CORN MACHINE.

Figure 5. Advertisement from White's Directory for 1866.

Figure 6. ♀ ♀ 8oz iron weight, Parsons.



were associated with the firm of Taylor and Parsons, general ironmongers. The scale-making side of the business flourished, and weights and scales with the name of S. Parsons can still be found quite frequently (Figure 6). The final fate of the firm will be revealed below.

Returning to the mid-19th century, Ibbetson's directory for 1850 listed three firms in addition to Hill's as Scale Beam and Weighing Machine Makers:

Robert Crosland, Union Foundry, Manchester Road;

William Rhodes, 99 Westgate;

Henry Richardson, 5 Bedford Street, Bridge Street.

Robert Crosland was an ironfounder, who presumably made large iron beams. William Rhodes and Henry Richardson were whitesmiths. Richardson advertised a range of services in *White's Directory* for 1866, including 'weights accurately adjusted' and 'weighing machines and scale beams repaired'. This firm was still involved in the scale-and-weight trade in 1912, with premises at 155/157 George Street, Wakefield Road, but the evidence suggests that it was being run by the Parsons firm.

Several other makers and repairers of scales and weights were listed in Bradford directories around the turn of the century, and at least one of them, Greenwood Hodgson, seems to have been very successful. But another kind of scale maker also appeared on the scene at that time. The Birmingham firm of W. & T. Avery had set out to establish itself as the dominant force in the trade nationally. By 1891 they had opened a shop in Bradford at 39 Nelson

town, led to an enormous increase in demand, and eventually some of the suppliers began to specialize in work connected with weights and scales. The first known reference to a specialist is in Ibbetson's *Directory of Bradford* for 1845, where John Hill & Co. are listed as weighing machine and scale beam manufacturers at 60 Market Street.

The successors of this firm can be traced up to the present day. In Ibbetson's directory for 1850 James Brayshaw was listed as an associate of Hill & Co., and by 1856 the firm had become Hill and Brayshaw. An advertisement (Figure 5) in *White's Directory* for 1866 shows that their business was specifically focussed on weighing. In 1883 the firm advertised in *Kelly's Bradford Directory* under the name of James Brayshaw and Son, with premises at 3 Booth Street. James Brayshaw died in 1889, and by 1898 the Booth Street premises had been taken over by Stanley Parsons, a young man whose family

Figure 7. ♀ ♀ 4lb oval iron weight, LM.





Figure 8. Bradford verification mark ER 14 on an oval weight.

Dawson, a remarkable entrepreneur who also made original contributions to the science of mineralogy⁴. Possibly as a result of his scientific expertise, iron from Low Moor gained a reputation for the highest quality. The firm was awarded a Prize Medal at the Great Exhibition of 1851, and when a new national standard of length was being prepared in the 1850s, several copies were made of Low Moor iron. One of them (No.57) was sent to the USA⁵. More relevant to our theme is the fact that cast iron weights were widely used in trade, and many 19th century examples have survived⁶. Some distinctive examples are shaped like an oval cylinder, and some of them have the letters L M cast in them (Figure 7).

The fact that many of these oval weights are stamped with the Bradford verification number (Figure 8) suggests strongly that L M stands for Low Moor⁷. It is known that the Ironworks itself had a foundry that produced objects for domestic use, such as smoothing irons⁸, and it likely that the weights were made there. It is also possible that other local iron founders used Low Moor iron to produce weights. For example, there are almost identical weights bearing the initials J.H (Figure 9), which could refer to J. Hopkinson and Son, a firm of founders that offered 'malleable iron castings of every description' in White's 1866 *Directory*.



Figure 9. 2lb oval iron weight, J.H.

Street, and in 1901 they were at 143 Leeds Road. In 1912 they were at 2 Harris Street, where they remained until the 1950s. The company pursued an aggressive strategy and gradually took over many smaller firms throughout the country, but in Bradford their main competitor, Parsons, did not succumb until 1953. In line with Avery's usual strategy, the name Parsons continued to be used for several years after the takeover.

There is one further contribution of Bradford to the making of weights that must be mentioned. The town's mineral wealth had led to the establishment of the famous Ironworks at Low Moor³ in 1789. The first ironmaster was the Reverend Joseph

The foregoing discussion has centred on the scales and weights used in general trades such as grocery. Bradford also had a very special place in the textile trades, and in Part 2 we shall describe some of the scales and weights that were used in that line. As we shall see, several firms based in Bradford, including Parsons and Avery, made products specifically for that purpose.

References for Part I

1. Norman Biggs. *Verification Marks on Weights: The Administrative Background*. White House Publications, 1996.
2. Carl Ricketts, with John Douglas. *Marks and Marking of Weights and Measures of the British Isles*. Taunton, 1996.
3. T.S.Ashton. *Iron and Steel in the Industrial Revolution*. Manchester: University Press, 1951.
4. A.J. Pacey. 'Emerging from the museum: Joseph Dawson, mineralogist, 1740-1813.' *British J. History of Science*, 36 (2003) 455-469.
5. G.B. Airy. 'The New National Standard of Length.' *Phil. Trans. Roy. Soc.*, 147 (1857) 621-702.
6. Norman Biggs. *Antique Weights: The Nineteenth Century*. White House Publications, 1998.
7. Albert Rangeley, personal communication.
8. Jenny Hutchinson, personal communication.

Bourn's 31 Lionel Street 'Sovereign Rocker' Foundry

BY MICHAEL FOSTER

John Bourn, Brass founder, started making sovereign rockers at his foundry at 31 Lionel St., Birmingham, about 1820. Forty-nine years and three company names and owners later in 1869 they were still making the same sovereign rocker!

This statement is based on my study of the Bourn Crown found on Bourn rockers and rockers made by follow-on owners, now documented, of the 31 Lionel St. foundry which will be discussed in this article¹. Dates quoted are supported by documented References to the named owners or company, at the location, in the year indicated, and derived from Birmingham and Warwickshire Directory listings.

John Bourn was in operation at his foundry at 31 Lionel St., Birmingham, by 1818. The original Bourn rocker was made at the foundry with the Bourn Crown stamp on the poise, and the 'BOURN' label on the beam, starting about 1820 and continuing until 1850. During the period from 1828-43 Bourn made a series of rockers for Hyam Hyams, of 22 Cornhill, London, many with the Bourn Crown stamp on the poise.



Fig. 1. ▲▲ Bourn Crown Drawing.



Fig. 2. ▲▲ Bourn Crown on Bourn rocker.



Fig. 3. ▲▲ Bourn Crown on a Hyams rocker.



Fig. 4. ▲▲ The Original Bourn Rocker.



Fig. 5. ▲▲ Later variant of the Original Bourn rocker (Note that the spacing between platters is reduced).

By 1849, a Directory listing shows that John Bourn was joined at the Lionel Street foundry by William Webb Norton, brass founder, who married into John Bourn's family.

By 1852-3, William Webb Norton was the listed owner of 'W. W. Norton & Co.' at the 31 Lionel Street foundry taking over from John Bourn.

There are rockers with the Bourn Crown stamp but no label that are perhaps attributable to W.W. Norton & Co. as William Webb Norton established himself as a brass founder and sovereign rocker maker and continued to use the Bourn Crown stamp as the brand mark for the 31 Lionel St. foundry.



Figures 6 & 7. Possible W.W. Norton & Co. rockers with the Bourn Crown.



By 1858, 'W.W. Norton & Co.' was dissolved, and William Webb Norton had taken on a junior partner, William Palk, brass founder. Partnerships in 19th century England typically had the senior partner listed first followed by the junior partner, hence a new name 'Norton and Palk' is listed at the 31 Lionel St. foundry from 1858-62. Norton and Palk continued to make the original Bourn rocker and continued to use the Bourn Crown stamp for the 31 Lionel St. foundry brand mark but now with the 'NORTON & PALK' label on the beam.



Figure 8. Norton & Palk rocker with Bourn Crown.

Five years later in 1867, William Palk was the senior partner and a William Bourn Norton was the listed junior partner at the 31 Lionel St. foundry. During the Victorian period, children were often given a middle name that was the surname of the mother before marriage. William Bourn Norton was the son of William Webb Norton and John Bourn's sister. The new company name became 'Palk and Norton' and they continued to make the original Bourn rocker, with the Bourn Crown stamp but now with the 'PALK & NORTON' label on the beam.



Figure 9. Palk & Norton rocker with Bourn Crown.

From the *London Gazette* of August 24, 1869 the partnership between William Palk and William Bourn Norton, brass founders of Birmingham was dissolved by mutual consent ².

A summary of Research and Time-line from Birmingham Directories for the Bourn Crown and the 31 Lionel St. foundry:

John Bourn

- 1818 John Bourn, brass founder, Lionel St. Birmingham, Reference: *Wrightson's new Triennial Directory of Birmingham 1818*, p.19 and p.154 under Brass founders.
- 1828 John Bourn, brass founder, 31 Lionel St., Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1828-9 [Part 2: Notts - Yorks & N Wales]*, p.768 and p.784 under Brass founders.
- 1830 John Bourn, brass and moulding founders, 31 Lionel St., Birmingham, Reference: *The History, Topography and Directory of Warwickshire*, by Wm. West, 1830, p.313.
- 1835 John Bourn, brass founder, 31 Lionel St., Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1835*, p.535 under Brass Founders.
- 1842 John Bourn, brass founder, 31 Lionel St., Birmingham, Reference: *Pigot and Co.'s Royal National and Commercial Directory and Topography, July 1842*, p.18 and p.79 under Brass Founders.
- 1847 John Bourn, brass founder, 31 Lionel St., Birmingham, Reference: *Slater's Classified Directories 1847*, p.5 under Brass Founders.
- 1849 John Bourn, brass founder, 31 Lionel St., Birmingham, Reference: *History and General Directory of the Borough of Birmingham*, by Francis White and Co., 1849, p.112 and p.313.
- 1849 William Webb Norton, brass founder, 31 Lionel St., Birmingham, Reference: *History and General Directory of the Borough of Birmingham*, by Francis White and Co., 1849, p.221 -- joined Bourn, married into family.
- 1850 John Bourn, brass founder, 31 Lionel St., Birmingham, Reference: *History, Gazetteer, and Directory of Warwickshire*, by Francis White and Co., 1850, p.313.
- 1850 William Webb Norton, brass founder, 31 Lionel St., Birmingham, Reference: *History, Gazetteer, and Directory of Warwickshire*, by Francis White and Co., 1850, p.221.

W. W. Norton & Co.

- 1852 William Webb Norton & Co., brass founders, 31 Lionel St., Birmingham, Reference: *Slater's General and Classified Directory of Birmingham, for 1852-3*, p.30 under Brass Founders and p.256.
- 1858 Partnership of Harriet Norton, Charles Brumbridge, Eliza Bogle, and Frances Louisa Ledam, Eccleston, Cabinet Brass founders, in Birmingham, under the firm of W.W. Norton and Co. was dissolved 1 January, 1858. Reference: *London Gazette Issue 22094*, 9 February, 1858, p.634

Norton & Palk

- 1858 Norton & Palk, (late John Bourne) general cast, brass founders, manufacturers of brass stop butt and other hinges, blind and bell furniture, &c. 31 Lionel St., Birmingham, Reference: *General and Commercial Directory of the Borough of Birmingham*, by W.H. Dix and Company, 1858, p.227.
- 1858 William Palk, general brass founder, home: 2 Heathfield Pl, Handsworth. Reference: *General and Commercial Directory of the Borough of Birmingham*, by W.H. Dix and Company, 1858, p.231.
- 1862 Norton & Palk, brass founders, 31 Lionel St., Birmingham, Reference: *Business Directory of Birmingham 1862*, J.S.C. Morris, p.47.

Palk & Norton

- 1867 Palk & Norton, cabinet brass founders, 31 Lionel St., Birmingham, Reference: *The Post Office Directory of Birmingham, 1867*, p.66, p.242 and p.300 under Brass Founders.
- 1867 William Bourn Norton, cabinet brass founder, (see Palk & Norton), home: Soho Hill, Handsworth. Reference: *The Post Office Directory of Birmingham, 1867*, p.119, p.151 and p.240..
- 1869 Partnership between William Palk and William Bourn Norton of Birmingham, brass founders, trading under the name Palk and Norton was dissolved by mutual consent 13 August, 1869. Reference: *London Gazette, Issue 23529, 24 August, 1869*, p.4766.

Lionel St Related

- 1872 Bankruptcy of William Bourn Norton and William Henry Marrian of No. 31 and 32 Lionel St, Birmingham, as brass founders under the names of Norton and Marrian and gilt jewellers under the name of W. Webb and Co. Reference: *London Gazette Issue 23896*, Sept. 13, 1872, pp.4026-27.
- 1874 Bankruptcy of William Bourn Norton, of W. B. Norton & Co, 79 Shoreditch, Cabinet Brass Founder. Reference: *London Gazette Issue 24105, 16 June 1874*, p.3077 and *London Gazette Issue 24111, 7 July 1874*, p. 3416.
- 1875 31 Lionel St. foundry is gone. Reference: Francis White & Co.'s *Commercial & Trade Directory of Birmingham, 1875*.

I believe that we can conclude from this information that the 31 Lionel St. foundry made sovereign rockers for a period of 49 years, from about 1820 to 1869, with the Bourn Crown stamp on the poise as a brand mark, under the names: Bourn, W. W. Norton & Co, Norton & Palk, and finally Palk & Norton.

Acknowledgements:

Special thanks to Diana Crawforth-Hitchins for her assistance and patience with the author.

Notes & References:

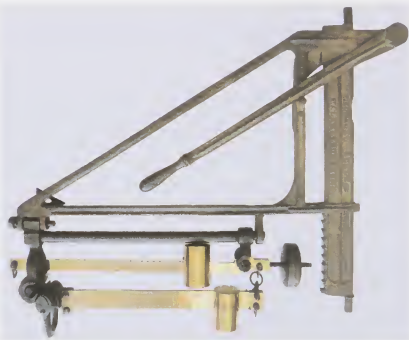
1. Reference my Book: "Sovereign Balances 2 – Standard and Non-Standard Rockers and Crowns".
2. Reference from Diana Crawforth-Hitchins.

Why the *Michigan Scale* Was a Great Seller

BY UTZ SCHMIDT and JACK YOUNG

As usual, Jack roamed on eBay to find new treasures, when the scale bug hit again and forced him to bid on a scale made by the **Michigan Scale Co** around 1879. By the way, there is something else you have to know about Jack. His otherwise perfect Deville stops without any of his doings at each antique store along the road and cannot be moved unless it senses an extensive visit in the store. Poor Jack, he is still figuring out how to explain his delay, arriving hours late at our house. Hearing his story, I had only one thought. How could I convince him to sell me the car?

Seeing the same auction, I had left a message with the seller that I would love to share information on the scale with the buyer, who happened to be Jack. After taking possession of the treasure, a series of emails started, which continued, now one year later, with a visit from Jack to write this article with me. You, as the reader, can follow an edited version below. Jack's comments and questions are printed in black, mine in blue, both are in Italics.



THE MICHIGAN SCALE

COMBINES

MANY SCALES IN ONE WITHOUT COMPLICATION.

Weights from 1-8 of an Ounce to 850 Pounds.

No Loose Weights to Get Lost or Broken.

UNIFORMLY ACCURATE AND DURABLE.

EVERY SCALE WARRANTED TO BE U. S. STANDARD, AND AS REPRESENTED.

PRICE LIST.

Scale, complete, with large and small Platforms, and three sets of Brackets, ready for use	\$29 00
Bag Holders	1 00
Barrel Grapples	1 00

Advertisement with accuracy claim.

Jack: So, here I am, asking for the "lot of information" you offered on this scale. I believe it is what is normally called a "Meat Beam." It appears to have a dual weighing ability. Is this correct? Do these scales use any counterweights?

Utz: Please read EQM 2007 issue No.2 on page 3244. You attended ISASC's Dearborn convention; so please take the CD and you will find the ad with all the attachments and multiple pictures. It is section 19 Miscellaneous Companies more towards the end. Have fun with your scale. It is one of the few found from this company, which sold US- wide.

Jack: Utz, I don't know how interested you are in the actual use of this scale, but since I was born into the scale business, and spent most of my working life doing testing and calibration of scales, and yes, selling and repairing, I always look at a scale's ability to do the job. So far, **this scale has shown me why it didn't become a great seller.** If you care to discuss this with me, please feel free to do so.

I should have stopped right then before the avalanche of information started. And now the teaching started and I turned out to be the engineer with some book knowledge but



A special find 130 years later.

the need to learn how this scale works. As the reader, you might be in the same boat and enjoy the lesson.

Jack: *I have installed the scale and find that it seems to be a much lighter capacity than its construction would lead me to believe. I had mentioned to you that it may have been a "Meat Beam" for weighing large pieces of meat, but now, I don't see how it could.*

I tried to lay low, because I had no clue what Jack was talking about.

Utz: *Did you find the information on the CD? You are now in possession of one of the oldest scales made in Michigan. It is a rare find. The Michigan Scale Co. of Kalamazoo existed, according to my research, from 1879 to 1906.*

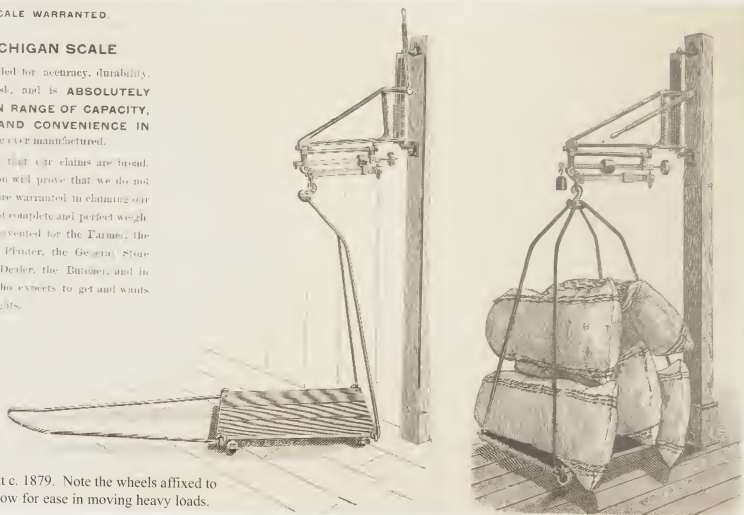
Jack: **HOLD THE PHONE** - I JUST CHECKED THE SCALE AGAIN AND SEE WHAT I DISCOVERED. When **LOADING THE HEAVY END** "H" COMMODITY LOOP/HANGER, you use the top row of the upper weight beam, reading 16 to 432 in 16-pound increments with notches. The lower weight beam is marked 0 to 20 in one-pound increments with eight divisions to allow a two-ounce reading. This weight beam is not notched with the poise weight merely sliding on the beam. SO - that means that this scale can weigh up to 432 pounds, plus 20 more on lower beam, 452 pounds. A few minor problems exist, such as the upper weight beam poise weight has no stop at zero, and unless you

EVERY SCALE WARRANTED.

THE MICHIGAN SCALE

Cannot be excelled for accuracy, durability, strength and finish, and is **ABSOLUTELY UNEQUALED IN RANGE OF CAPACITY, PORTABILITY AND CONVENIENCE IN USE**, by any Scale ever manufactured.

We fully realize that our claims are broad, but an investigation will prove that we do not overstate, and are warranted in claiming our Scales to be the most complete and perfect weighing machine ever invented for the Farmer, the Store Keeper, the Planter, the General Store Owner, the Horse Dealer, the Butcher, and in fact for everyone who expects to get and wants to retain correct weights.



Old Advertisement c. 1879. Note the wheels affixed to the platform to allow for ease in moving heavy loads.



1. With Hooks, they are a perfect Commodity for weighing any commodity in compressed bales.

2. With a Cradle, they are the best made for handling bulky produce loose, in bags or sacks.

3. The Bag Holder recommends itself as an exceedingly valuable attachment, as with it a bag can be filled and the contents weighed with out needing of assistance.

4. The Platform is very large, 24x30 inches, to be movable, and, working on swivel wheels, can be used to draw the load to and from the scales, and is useful as a general truck.

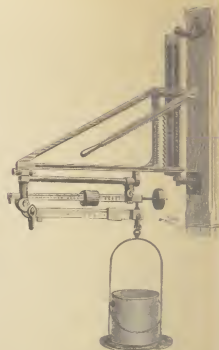
5. These are advantages in other Scales have a possibility to possess, as they are fully covered by United States patents.

6. They are constructed on well known mathematical principles, made of the very best materials, with improved machinery, and are therefore accurate and durable.

7. The manufacturers are responsible, and every scale is warranted to be as represented.

MICHIGAN SCALE CO.,
KALAMAZOO,
MICHIGAN.

Old Advertisement c. 1879.



are very careful it can be... WAIT A MINUTE ... I just went to measure how far the poise weight can travel under the zero mark, and low and behold I found a drilled hole on top of the beam ... this means at some point there was a stop, just no number zero. Enough for now.

Utz: The Michigan scale ad shows all the equipment you could get with it. It was an all-around scale. Did you open the pictures?

Jack: Yes, I did open the pictures ... again, thank you for sending them. BUT ... the pictures and text have answered some questions and opened the door for more. For example, on the brochure with just the scale shown, it states: "No Loose Weights to Get Lost or Broken." Just above you can read: "Weighs from 1/8 of an Ounce to 850 Pounds." **No way is the scale I have going to weigh up to 850 pounds without any counter poise weights.** The brochure showing the suspended platform ... when loaded, they DO have a loose weight hanging from the tip of the top beam. That is how the scale can weigh up to 850 pounds by just adding an additional 400 pounds with the counter poise weight at Point "P"

Utz: Great information, Jack, thanks.

Jack: I did get, from the pictures you sent, how they used the lowering of the heavy load loop for loading, and then lifting to weigh. I have now figured out how to weigh ounces on the Michigan Scale. I do believe they must have given an instruction sheet on the multiple ways to use it. You may or may not have already known this but here it is anyway. When weighing at the LIGHT END "L" COMMODITY LOOP, you read the weight on the bottom row of the upper weigh beam with the numbers 1 to 27 in one pound increments, utilizing again the above mentioned poise weight notches for the top row. Now on the lower weigh beam, the previous pound marks become 1 to 20 ounces, thereby allowing readings in 1/8th of an ounce. **Quite ingenious I'd say. BY THE WAY ... the sensitivity and accuracy of this scale is quite remarkable.**

NOTICE THE ADVANTAGES

PURCHASERS OF THE MICHIGAN SCALE,

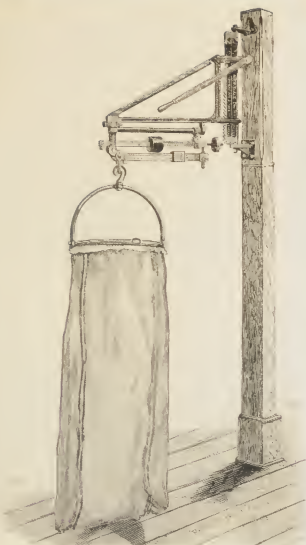
WHICH THEIR MANUFACTURERS GUARANTEE.

That it is so simple in construction, and then working so easily understood—the pivots and bearing points being always in sight—that the possibility of getting out of order is reduced to a minimum. This is an important consideration, as other scales are in frequent need of repairs and readjustment by experts, at no little expense.

The same accuracy has also been equaled. We weigh 500 pounds, and on the same scale, weigh and indicate the eighth of an ounce. No other scale of this same capacity indicates less than half an ounce.

That we do ~~know~~ that a woman or boy can take them out from the brackets and move from place to place easily and quickly, yet the frames and supports being of the best "Air Furnace" malleable iron, are sufficiently strong, and we fully warrant them not to break or give out under fair usage.

The Scales can be used in every way the ordinary Scales can be, and in very many places and ways where others cannot.



Utz: *Excellent observations. This would be a great story for EQM!*

Jack: *Let's let it rest for now. I have spent much more time on this scale than planned but have enjoyed the learning experience. I have to admit, the more I study this scale the more I find that my initial, somewhat low opinion of this scale was premature.*

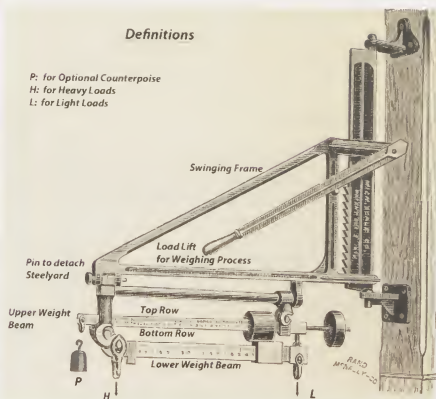
After struggling through all this, you as the reader might wholeheartedly agree with my concluding statement: "I was the one who needed a lot of information." Thanks Jack.

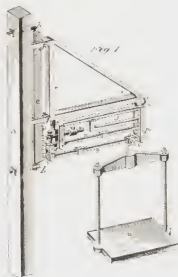


Bag holder for the Michigan scale.

Definitions

P: for Optional Counterpoise
H: for Heavy Loads
L: for Light Loads





made by
Fred G. Dieterich
St. Louis, Mo.

Inventor
L. G. Woolley
St. Louis, Mo.

But the story is not complete without a review of the patent, which was granted No. 222,341 on December 2, 1879, just five months after the application date. It starts with: *Be it known that I, Leonidas G. Woolley of Mendon, in the county of St Joseph and State of Michigan, have invented...and it consists in attaching the scales to an adjustable swinging frame, whereby the scales can be raised vertically to accommodate it to a bag-holder; or to the height of the person using the scales, and then swung back out of the way when no longer needed for immediate use. It still further consists in the peculiar construction of the pivots in which the beams are secured...as to enable the scales to be held in the hand and used as a steelyard when detached from its supporting-frame. This construction is of the greatest utility, for it enables a person to use the scales in the house for weighing light articles of all kinds...*

Here again a line of skepticism from Jack: *I am not so sure that their proclamation - "MANY SCALES IN ONE WITHOUT COMPLICATION rings true. Here's my rebuttal. First of all, we can detach the steelyard by removing one pin and use it at any location where it is*

needed. Furthermore the ad shows different attachments, which adapt the scale for various applications. There is an easy load platform for sacks, a bag holding device for use during the filling process, barrel grapples, hooks for cotton, and a hanging plate for small stuff including buckets. Let me finish with a quote from about 1897, made by the Trask Fish Co. in St Louis, Mo: "For our business we have never seen any better." But best of all, Jack and I agree after this extensive study and recommend "Buy Michigan."

Acknowledgements: Thank you again, Jack, you are an excellent teacher. Thanks for all your information and contribution.

Used in this article are parts of a company ad from around 1880 in possession of the author. Thanks to Jim Dietrich's persistent search and success in unearthing even the 130 year old attachment for this scale, it was possible to enrich the article with actual pictures.

Is it just a fluke that one of the witnesses on the patent is Fred G. Dieterich? Is this a long lost relative of Jim with the original spelling of the name? Jim even found the scale below, which continued its weighing-life after a repair of the broken frame.

A year has passed between drafting this article and its publication. Guess what? It's once again Jim who adds another important fact to the story. The scale was quite popular as evidenced by the bunch of siblings he was able to find for his collection in the meantime. So after all, the Michigan Scale was quite popular. In case you have one as well, please send the serial number, as seen at the front end of the lower beam. Anyone above 9896?

The highest number wins!



Worth a repair.



Scale beams with serial number.

Weight Depositing Scale

BY MICHAEL CRAWFORTH

Editor's Note: This article originally appeared in EQM 1987, Issue 1, pages 982-983. It is reprinted here in its entirety with new illustrations.

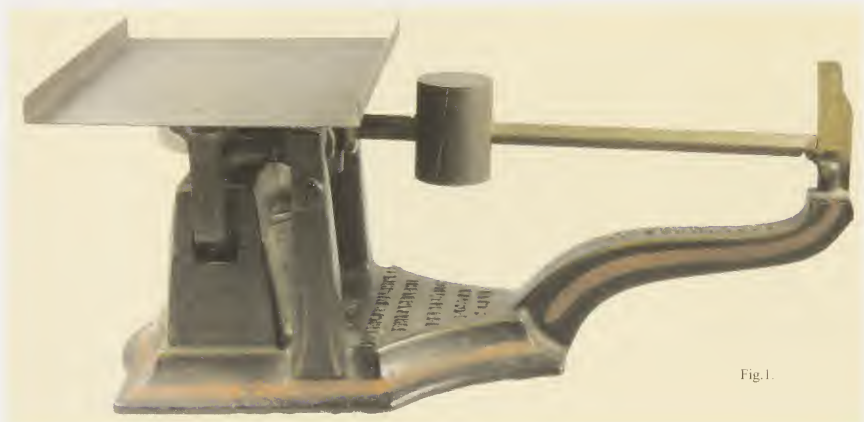


Fig. 1.

This most unusual postal scale is based on a rare principle. At first glance, it looks like any other American counter steelyard, but the first clue to something unusual comes when the steelyard blade is examined. It is graduated only in steps of eight: 0, 8, 16, 24, 32, 40, 48 & 56, with no intermediate marks or notches. The next clue comes from the arc attached to the guard which restrains the end of the blade, which is graduated from 1 to 8 starting at the bottom. So, it appears that a coarse setting is obtained by placing the sliding poise at one of the eight-unit steps on the beam, and that the intermediate values are read from the graduated arc. No units of weight are marked on the scale, but by deduction, they must be ounces. Thus, if the sliding poise is set at 32 and the arc reads 5, the indicated weight is $32 + 5 = 37$ oz, or 2 lb 5 oz.

The next question is: How does the inclination range work to give the intermediate readings on the arc? What gives the progressive resistance to weigh from 1 to 8 oz? Why do the graduations progress upwards?

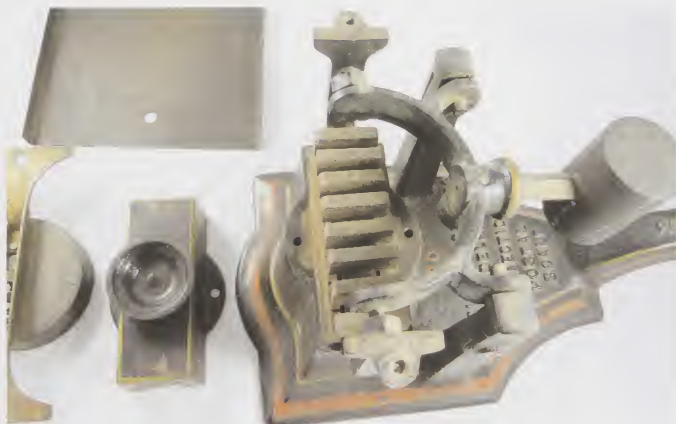
Under the goods plate, and contained inside a large rectangular cast-iron housing, are eight rectangular weights. Each weight rests on a flat bar suspended from the beam underneath the goods plate, Fig 2. When all these weights are resting on the bar, and with the sliding poise at zero, the beam is in equilibrium. When a load is placed on the plate, the plate descends, depositing one of the suspended weights on a stepped platform inside the housing, Fig 2. The plate continues to descend, depositing one weight at a time on the next lowest step, until the load is balanced. Each of the weights deposited represents one ounce, so the total number of ounces is registered on the graduated arc.

The cast-iron base is marked 'AMERICAN MACHINE CO. PHILADELPHIA. PERFECTION POSTAL SCALE. PAT. SEPT 1, 1885'. The overall length is 16 inches (410mm).



FIG 2. (above) Top: the parcel plate. Left: the support bracket for the plate, with round 'stop' buffer underneath. Centre: the top housing shown upside down revealing the weights in their slots. Right: the main housing showing the bar on which the weights rest suspended in a slot in the stepped platform.

FIG 3. (below) Top: the parcel plate. Left: part of the bracket; the top housing with the round fixed stop. Centre: the main housing with weights in place on the suspension bar. The weights have numbers stamped on them. Sliding poise is visible on the beam, right.



American Machine Co. Perfection Scales

Editor's note: This article is a reprint of an article that originally appeared in the Pennsylvania State Agricultural Society Reports of 1886. It was published in Harrisburg in 1887 by Edwin K Meyers, State Printer.

The American Machine Company, north-east corner Lehigh avenue and American street, Philadelphia, made a large and interesting display of their hardware specialties, among them the new "Perfection Scales," a very ingenious and convenient invention dispensing with the use of movable weights, and made in a large number of different styles, one of which is seen in Fig. 50, showing the arrangement of the self-acting weights. 1, 2, 3, etc., are the weights suspended on a bracket and held one above another, with regular intervals of space between them, and just above and in position to be acted upon by the weight jack, B B, resting on the lever pivots. The arrangement is such that, as goods are placed in the scoop the lever will turn, first raising the bottom weight off its seat, A, and then adding the others, one after another, until the lever turns sufficiently to raise them all off their seats on the bracket, when they will be resting on the lever.

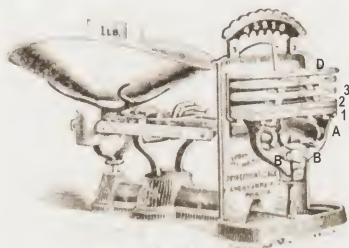


FIG. 50.

The index finger is so arranged that it will move from one figure on the dial to the next just at the precise time such weight is balanced with goods and raised.

Thus, in the cut one pound placed in the scoop just raises weight 1 off its seat, A, and moves the index finger slowly up to figure 1 on the dial. Should another pound now be added to the scoop, it would raise weight 2, with the first, and bring the index finger to the figure 2 on the dial, and so on.

In use, exact weight is when the index finger moves very slowly up to the figure on the dial representing the weight required. It stands still before and after weight is obtained.

Intermediate or fractional weights are determined on the brass beam.

The hood, D, completely covers the weights, securing them in their position and also protecting them from dirt, etc.

Another form is the "Automatic Perfection Postal Scale," shown in Fig. 51, and designed to facilitate the weighing of mail matter of all classes. It is provided with a series of small automatic weights, and when letters or small packages are placed on the scale, the pointer instantly, and without vibration, indicates the weight on which postage must be paid, always including the fractional part of a unit as a full unit.

Thus, when the unit is one ounce, any parcel weighing one ounce or less will bring the pointer to the one-ounce mark; more than one and not more than two ounces, to the two-ounce mark, and so on. The one-fourth and one-half pound scale require no poise weight, the automatic weights balancing the entire capacity of scale.

The poise weight on the beam of four pounds scale is movable only to multiples of the amount of the series of weights, and is to be used only when weighing heavy packages. Then, by moving it to the proper notch to bring the automatic weights into action, the pointer will at once indicate the additional weight of the package.



FIG. 51.

Thus, in the scale shown in the above cut, there are eight one-ounce automatic weights, which are indicated at the end of the beam, and the beam is notched at each eight ounces only. In weighing a parcel of more than thirteen ounces, and not more than fourteen ounces, the poise weight must be moved to the eight-ounce notch, when the end of the beam will at once point to the six, $8 + 6 = 14$ ounces, which is the weight for postage.

David Hallock & His Unusual Scales

BY JAN BERNING

David Hallock was born in 1840 in New Baltimore, New York, a small town on the Hudson River, where he and four brothers lived and worked on his father Joseph's farm during the 1850 and 1860 census. By the 1870 census, David had moved nearby to Cossackie, New York, where he lived with his older brother Stephen, who was a Dry Goods Merchant. David's occupation was listed as a Journeyman, he was married to Sarah, and they had two young children. By the 1880 census for Cossackie, he was listed as a Scale Manufacturer, and they had two more children, an earlier one having died in childhood.

In 1881, David Hallock was awarded the prestigious John Scott medal for a new System of Automatic Weighing Scales¹. This was for patent number 213,898 which was patented on April 1, 1879 (Figure 1). This patent lists Cossackie as Hallock's home. The scale was described by the inventor as follows: *It consists in suspending the weights so that as the material is put in the scoop the opposite end of the beam is raised, lifting successively the weights from their seats until a sufficient number is lifted to obtain the desired weight of material placed in the scoop, and indicate accurately the weight thereof.*

The next information found about the Perfection scale reads as follows: *Stephen B Hoyt, Sr., was New England agent for a weighing scale company in Cossackie, New York when in the summer of 1880 he let it be known that the company wanted to move its plant closer to New York City. Wasting no time, the Board of Trade sent a committee to Cossackie and worked out a deal whereby a Connecticut Corporation would be formed, if the scale company would lease William E. Raymond's now vacant perfume factory. (This was the building erected in 1870 on Pleasant Ave. for an ill-fated Sewing Machine Co.) Articles of Association for the Perfection Scale Co. were signed in New Canaan on September 9, 1880, and a certificate for a joint stock company was filed October 1 with the legislature.*

A major asset of the Perfection Co. was a patent, carried on the books at \$5,000, for an improvement in weighing scales that had been issued on April 1, 1879, to David Hallock of Cossackie, principal owner of the old company and president of the new one. Eventually paying in \$15,000, 20 New Canaan men invested in 200 of the 400 shares of Perfection stock, with Russell L. Hall, the undertaker buying 25 shares and becoming

D. HALLOCK.
Weighing-Scales.

No. 213,898.

Patented April 1, 1879.

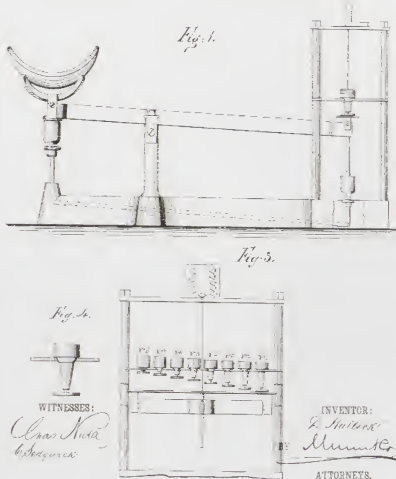


Figure 1. David Hallock's first patent #213898 was a weight lifting scale. Fig. 1 is a side view, Fig. 3 shows the shape of the poises and Fig. 4 shows the end view with the hood removed. Does any collector have a scale based on this patent?

Figure 2.  Hallock's second scale patent, number 311745, was issued on February 3, 1885. Hallock was living in New York City and his weight lifting scale was manufactured by the American Machine Company of Philadelphia, Pennsylvania. Fig. 1 shows the front view and Fig. 3 shows the end view with the hood removed.

treasurer. William E. Raymond, John Rogers, the sculptor, and Henry Pinney, the shoemaker, each bought 20 shares and Henry B. Rogers, 15. Among those buying 10 shares were Benjamin P. Mead for Burtis & Mead, James and Edwin Hoyt for Hoyt's Nurseries, Dr. William Parker, Sr., and Joseph F. Silliman, who became secretary.

Although casting still had to be done in Cossackie, the Perfection Scale Company was in business in New Canaan by late October, and predictions were made that it soon would provide jobs for 25 men. (Of Perfections initial 12 employees, five were men brought from Cossackie, one of whom was killed the next month in a plant accident.)

After two fairly prosperous years, the Perfection Scale Co. ran into trouble for reasons now unknown and became virtually bankrupt. At the same time, a disagreement arose between Hallock and the other shareholders as to who was to own improvements being made to the original scale design, and the directors removed Hallock as president. Meanwhile, as creditors pressed their claims, factory work was suspended at the end of 1882, with several hundred scales yet to be finished. Then in August 1883, two workmen were rehired to complete the unfinished scales, and business resumed for a while. In the end, the Perfection Scale Company followed the path of former New Canaan industries and shut down permanently in 1884.



(No Model.)

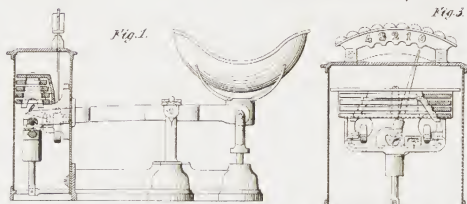
D. HALLOCK.

2 Sheets—Sheet 1.

WEIGHING SCALE.

No. 311,745.

Patented Feb. 3, 1885.



Witnesses:
Thos. Haynes
Ed. L. Moran

Inventor:
D. Hallock
John H. Morris
Samuel H. Brown

We know from the articles above and evidence found on existing scales that many Perfection postal scales were manufactured by the American Machine Company of Philadelphia, Pennsylvania. American Machine Co. was incorporated in Pennsylvania in 1872, and research seems to indicate that Hallock went to this company to produce his next two patented scales. *The building...was erected in 1879 to house the American Machine Works. It reached from American to Philip Street along Lehigh, and went back six bays into the block. A small*

Figure 3.  Hallock's shop scale based on patent 311745, above, is shown here with its hood removed exposing the weight lifting mechanism. Note that the beam is graduated to 8 ounces making the capacity of the scale a total of 2 pounds.

Courtesy Jack Mickevich.



extension on Philip Street housed the boiler, engine, and japanning (lacquering) rooms on the upper floors. Owned by a corporation, the company produced fluting machines and fancy hardware³.

Hallock was issued patent number 311745 on February 3, 1885 (Figure 3). This patent was for a weight lifting scale that was similar in case design to his earlier patent of 1879. However it utilized larger oblong weights rather than the small cylindrical weights of the earlier patent. Later that year, he was awarded patent number 325,534 (Figure 5) for a weight depositing postal scale which is described in other articles in this issue of EQM. The last patent number 336641 was issued to Hallock on February 23, 1886 for a multiple fulcrum scoop scale (Figure 6).

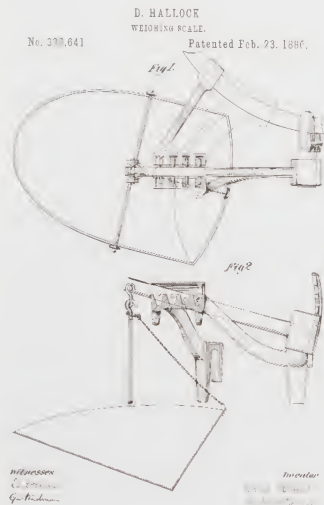
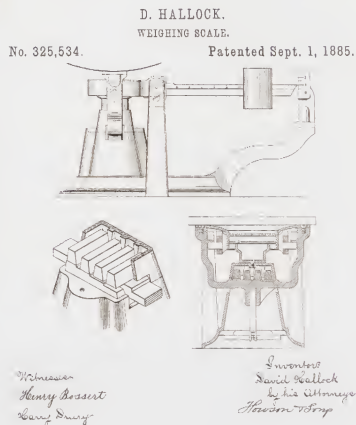


Figure 4. ↗ The American Machine Company shown here from an 1880 survey. The main building is at front, the small building, right, held the boiler, engine and Japanning rooms and the small building at rear left held the stable and carriage house⁴.

Figure 5. ↗ On this patent the top drawing shows a side view of the Perfection Postal Scale. At the bottom the left drawing shows the weights as they sit in their steps and the right drawing shows an end view of the scale.



Further research found in *The Philadelphia Inquirer* of December 5, 1885, reveals that; *The judges of the Novelties Exhibition made public yesterday the list of additional awards: American Machine Company, Perfection scale, silver medal; American Machine Company, Perfection postal scale, silver medal*⁵.

The New York Herald of May 28, 1891, reported as follows: *Machine Company Fails. Philadelphia May 27, 1891. Eight judgement notes, aggregating \$180,431, were entered today against the American Machine Company, and executions issued upon them. The company manufactures freezers and postal scales, and has a paid-up capital of \$150,000. Its liabilities are believed to be about \$200,000. The Philadelphia Inquirer of May 28, 1891 reported that American Machine*

Figure 6. ↗ Patent number 336641 was issued to David Hallock on February 23, 1886. On this patent, figure 1 shows a top view of the scoop scale and figure 2 shows the side view. In both drawings one can see the multiple fulcrums. The patent application was applied for in 1883. Is this the potato scale that was referred to as being displayed at the 1881 Massachusetts Exhibition⁶? Does any member have a scale like this in his collection?

Figure 7. ✂ This label is affixed inside the cover of every Perfection shop scale that has been dismantled. It shows a cut showing the arrangement and operation of the automatic weights and includes directions for setting up the scale when new. Does any member have a better copy on their scale hood? Courtesy Jack Mickevich.

Company's failure was due to embezzlement by the president and the resulting failure of Spring Garden Bank, in which American, as well as other companies, had heavy loans. *The American Machine Company building was occupied by North Brothers Manufacturing as early as 1892*⁴.

Apparently, the Perfection Scale Co. was opened in Cortland, New York shortly after American's failure. *The Annual Report of the Factory Inspectors of the State of New York* reports that in 1892 the Perfection Scale Company was operating at 22 Port Watson St. in Cortland, New York, had 8 male employees and manufactured scales⁵. The same report for January 1893 shows that the employees had increased to 10 men and one male under 18 with 69 hours of labor per week⁶. It is evident that this company too was short-lived as it was reported in *Office Men's Record* October through December of 1893, that *the Perfection Scale Company of Cortland New York has recently gone into the hands of a receiver*⁷.

Notes & References:

1. *Twelfth Annual Report of the Board of Directors of City Trusts*. Report for the Year 1881. Philadelphia, January, 1882, page 15.
2. King, Mary Louise, *Portrait of New Canaan, The History of a CT Town*, New Canaan Historical Society, Chester, PA, 1981,
3. *Hexamer General Survey* # 1522 (1880) "The American Machine Co.'s Works."
4. *The Philadelphia Inquirer*. 12-05-1885; Volume: CXIII; Page: 3
5. *Fourteenth Exhibition of the Massachusetts Charitable Mechanic Association*, Boston, September & October 1881, page 206
6. *Annual Report of the Factory Inspectors of the State of New York*, Volume 7, 1893.
7. *Annual Report of the Factory Inspectors of the State of New York*, Volume 8, January 31, 1894.
8. *Office Men's Record*, Volume VI, Oct-Dec 1893, page 102.
9. The author wishes to thank Steve Beare for his help with the research required to complete this article.



The Automatic Perfection Postal Scale.
Best in the World.
Rapid, Accurate and Convenient
 Those knowing its merits will use no other.
 MANUFACTURED BY
The Perfection Scale Co., Cortland, N. Y.
 SEND FOR CATALOGUE.

Figure 8. ✂ Advertisement for Perfection Postal Scale which appeared in *Office Men's Record* April-June 1893.

Perfection Postal Scale.

Editor's note: This article is a reprint of an article that originally appeared in the Office Men's Record of January - March 1892. It was published in Chicago in 1892 by the Office Men's Record Co..

We illustrate in these columns the Perfection Postal Scale, representing the greatest stride in the way of improvements in Postal Scales ever made. It is not only a machine with automatic action, instantly giving the weight of any parcel placed on the scale, but Indicating the exact weight on which postage must be paid rather than commercial weight, from which the postal weight must be computed in each instance.

These scales are made in two sizes, an 8 oz. size for regular office use and one having a capacity of 4 pounds for weighing letters or all packages up to the limit allowed to go through the mails.

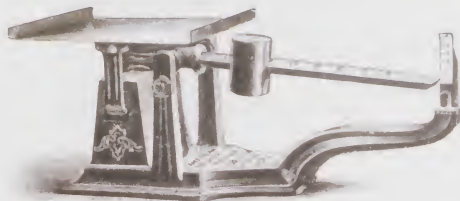
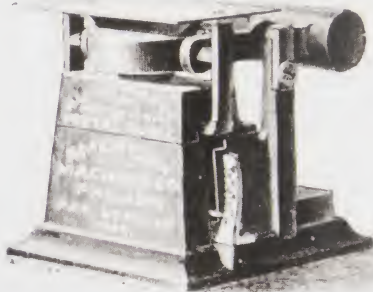
They are graduated to half ounces for weighing foreign letters, and to full ounces only, and without the half-ounce marks, for domestic and Canadian mail.

They are provided with a series of small weights entirely enclosed in the scale, an air check [damper] and an index pointer, the whole so arranged and adjusted that the instant a parcel is placed on the pan the weights are brought automatically into action, the index pointer to the figure, representing the exact postal weight, and the air check bringing all to an immediate rest.

We would quote from the report of the Postmaster at Washington, D. C., made to the Post Office Department, as follows: "Are satisfied that three pieces can be handled on the Automatic Perfection Postal Scale in the time formerly given, to one"; and also to the report of the party in the Washington, D. C. Post Office who has used this scale for the past four years, "That it is the quickest and best Postal Scale made and that he could not do his business without it."

The Perfection Postal Scales have been adopted for use in the postal service of the United States, and are now in use in the offices at New York, Boston, Philadelphia, Washington, and in many other of the larger cities and towns and in some of them exclusively. They are becoming quite generally used in banks, insurance and railroad offices and in the better class of manufacturing and mercantile houses throughout the country. Some time since, the government of Japan sent a commission to the United States and through Europe, to ascertain and report on the best methods of conducting the postal service and the most approved appliances to be used

therein and one of the results was a contract with the manufacturers of this scale to supply them for the entire postal service in Japan, and they are now in use in every post office in the Empire. They are now being manufactured by the Perfection Scale Co., of Cortland, N.Y., who will be pleased to furnish illustrated catalogues and further information on application.



A Little Perfection, If You Please

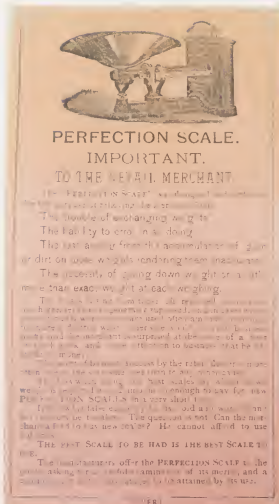
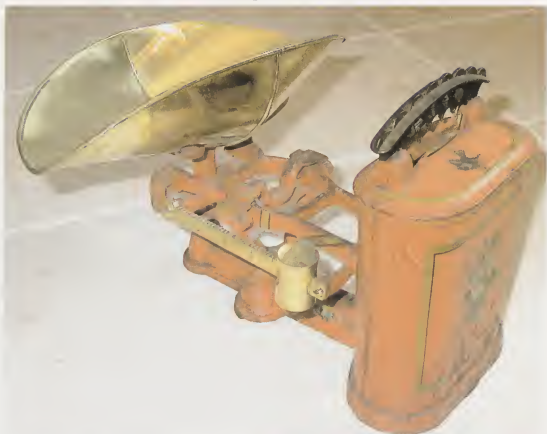
BY JEROME KATZ

In an 1987 EQM article, pgs 982 - 983 [and reprinted on pages 3589-3590 of this issue], Michael Crawforth discussed a "Weight Depositing Scale". It is a postal scale with typical external features; steelyard balance, sliding poise on beam and a goods plate. But the mechanics of the weighing is quite different. I will not repeat the weighing process here. The subject scale of Crawforth's article was made by the American Machine Co. Philadelphia, and marked "Perfection Postal Scale. Pat Sept 1, 1885".

The American Machine Co mainly produced hardware articles such as household tools; they had a big business in fluters.

The weight lifting mechanism is the weighing process of a counter shop scale (see Fig 1), and the weight depositing mechanism is the weighing process of the postal scale presented in this article. Both these scales are also identified with the name “Perfection” and carry the same patent date, Sept 1, 1885.

Fig. 1.  The Perfection shop scale.



Figures 2 & 3. ✎ This trade card for the Perfection shop scale dates from the time that these scales were being manufactured by American Machine Co. in 1884-1891.

On one side the card tells the merchant why he needs a scale like the Perfection in his shop. It reads *Important. To the Retail Merchant. The "Perfection Scale" was designed and perfected for the purpose of relieving the merchant from:*

The trouble of exchanging weights

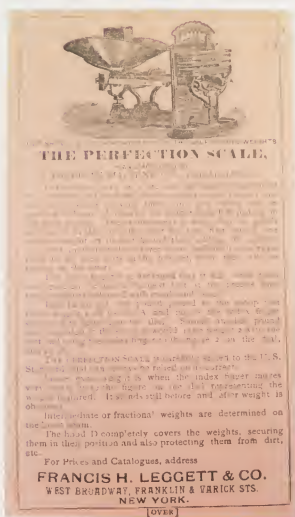
The liability to error in doing so

The loss arising from the accu-

gum or dirt on loose weights rendering them inaccurate

The necessity of giving down weight or little more than exact weight at each weighing...The loss when using the best scales by which down weight is required would amount to enough to pay for new PERFECTION SCALES in a very short time... THE BEST SCALE TO BE HAD IS THE BEST SCALE TO USE.

The obverse shows the cut shown in the previous articles and explains how the scale operates. The trade card was produced by Francis H. Leggett & Co. in New York which was a large wholesale grocery firm.



In researching the American Machine Co, I found plans dated 1880 for their factory, but more importantly I found the following tidbit which is excerpted from miscellaneous ramblings about Philadelphia.

Walking along the corridor of the Philadelphia Post-Office a peculiar weighing machine may be seen in use by the clerks at the different windows. This little machine is said to represent an improvement in postal scales amounting to almost a complete revolution in the practice of weighing mail-matter. It is manufactured by the American Machine Co, of Philadelphia, and is known as the "Perfection Automatic Postal Scale", and the phenomenal success with which it has already met by its adoption in the postal service of different countries, as well as by a large number of businesses, shows its merits to be appreciated.



Figure 4. The little Perfection postal scale has a cast iron base. The quadrant dial and rectangular plate are of brass. The base measures 6" by 5 1/4", the scale measures 6" tall by 6 1/2" long, including the counter poise and the plate measures 3 1/4" by 4 1/4".

Figure 5. The counter poise on the small Perfection postal scale boldly displays the patent date of Hallock's weight depositing postal steelyard scale. It reads PAT. SEPT. 1 1885 which is the exact date of Hallock's patent number 325534. Note the excellent original paint remains on the scale.

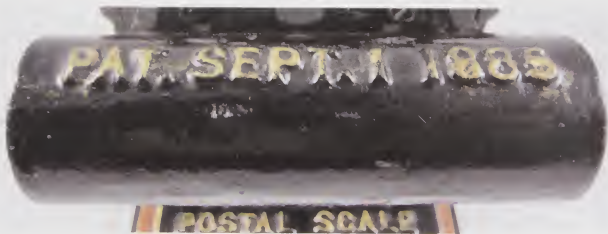




Figure 6. // Here one can see the 8 ounce arc and pointer for the little Perfection postal scale. Notice that the 1 is at the bottom of the scale. A load placed on the plate deposits the weights inside the casing one at a time until equilibrium is reached. The scale only weighs by the ounce rounding upwards for any fraction over an ounce.



Figure 7. \ Close up detail of the back of the Perfection postal scale shows the remainder of a paper label affixed to the back quoting postal rates in effect for 1886. Also clearly visible is the 8 ounce brass arc at right that is constructed of thick cast brass and screwed to the cast iron base of the scale.



Figure 8. ♣ ♣ The top of the base reads *American Mach. Co., Philada., Perfection Postal Scale*. It also bears a number 2196. Could this be an office property number or a serial number?

The words “little machine” are key. I believe what’s being talked about is NOT the steelyard-like postal scale discussed by Crawford, but is in fact its “little” brother and the subject of this article. We learn that this machine was used in Post Offices and made a hit overseas. Of all the companies which provided scales to the US Post Offices, Howard & Davis, Fairbanks, Howe, Toledo, Triner, Pelouze, I now learn that Perfection should be among them.

This Perfection Postal Scale is literally a “little” perfection - Absolutely pristine in every and all respects. On examination, a somewhat deteriorated paper label affixed to the back quotes postal rates in effect for 1886; that’s only one year after its patent date!! Also found was a 4 digit number “2196”, professionally hand-painted in red at the back of the base. Why this added number?? I propose that number is a property number, as companies, schools, etc use to inventory the lock and stock belonging to them. It’s more than reasonably to deduce, based on the cited ramblings above, this scale came out of a Post Office or a business office of some company. Wherever it’s been during the past 123 years, it’s been well treated.



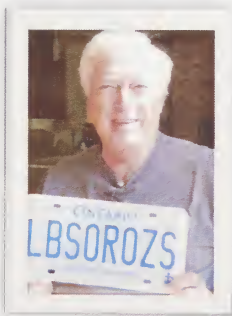
Figure 9. ♣ ♣ The underneath mechanism of the small Perfection Postal Scale. At right, you can clearly see the screw that attaches the arc chart to the scale base. Also visible are some of the weights that are deposited as the load is placed on the scale and the pointer arm.



A Balanced View

Well, we have had a busy summer, a very successful Convention in Portland followed by a number of regional meetings in Tennessee, Michigan and Illinois, a new and improved Web site has been launched and we continue to attract new members. Thanks to all of you the overall state of scale collecting is in pretty good shape.

Since I was just a wee lad I have wanted a pickup truck. This year, with the rationale that it would be handy to have one for chores around the cottage, I bought a used 2008 GMC Sierra. It came with some very acceptable license plates. However, my kids decided that I needed "Vanity Plates" and for Father's Day they gave me new plates with my eBay moniker "LBSOROZS" (pounds or ounces). We now have the whole neighborhood miffed as they try to figure out what the plate stands for. Only a special few have been able to break the code. I know that there are other Scalies who also have scale related vanity plates. The Bernings, for instance, have "IWEIGHU". Let us know what you have so we can share it with our members.



The East Tennessee Regional ISASC meeting

Phil Weyman reports: The East Tennessee Regional ISASC meeting was held in Chattanooga on Saturday, August 15, 2010. ISASC members attending were: Alex Roesch, Knoxville, Tenn, Les & Elaine Firth, Mercer, Penn, Phil Wehman, Chattanooga, Tenn, Non-members attending: Jeff Roesch and his two young children. After a whirlwind tour of the Wehman Scale Collection the non-members headed downtown to visit the Tennessee Aquarium.



Alex is the youngest ISASC member and the meeting was directed as a learning experience for him. As a 15 year old student at Webb School in Knoxville he has a good start into his knowledge of scales through instructions from granddad, Les. You may remember Alex from the 2008 ISASC convention in Chattanooga. He arrived too late for

the Friday tours and this was his time to catch-up. Sorry that I could not have given all of you an early notice of the meeting since I know you would have enjoyed being with your scale friends and could have stopped by Chattanooga on your way to Michigan and Illinois. Continue to have fun with your search for scales.

2010 Michigan Regional Meeting

Grey skies and a drizzling rain didn't deter 22 ISASC members and friends from enjoying a day of "scale talk", fun and fellowship. The Michigan Regional Meeting was held August 21, 2010, at the home of Ben and Mary Smith in Jackson, MI. Ben's scales are beautifully displayed throughout his home and everyone enjoyed looking and sharing information about these pristine examples. In addition,



Mary's delicious HAM along with Shirley Schmidt's baked beans highlighted lunch. Oh yes, "desert"----- everyone seemed "happy" with a piece of chocolate filled with a bit of liqueur. I overheard someone say that these little "goodies" could be purchased at Costco. Thanks, Ben and Mary for hosting the event.



2010 Midwest Regional Meeting



On a beautiful summer day, August 28th, 2010, “17 Scalies **weighed in**” at the home of Jan and Bill Berning in Sycamore, IL. There was an abundance of scales for sale and the Berning’s large and varied scale collection was there to see. Many rare and unusual scales live in Sycamore! Lots of conversation about scales was heard and sharing that information made for a great day. Lunch had an Italian theme and included pasta primavera with

broccoli, lasagna and garlic bread, enhanced with delicious salads and deserts. Our appetites were certainly satisfied. Cliff and DeVee Lushbough attended

this meeting on their way back to Colorado.

Cliff and DeVee are Hosts of the upcoming Denver Convention and Cliff was touting the convention and handing out book-marks to everyone with picture high-lights of some of the convention events. If I were



you I’d put the 2011 Convention on your calendar NOW. Dates are May 19 to May 23, 2011. Thanks, Bill and Jan for hosting this event.

Denver 2011 ISASC Convention

The annual convention in Denver is rapidly approaching. As always it promises to be a fun-filled and interesting time. Cliff and DeVee Lushbough have put together a wonderful agenda. You will be receiving a registration package early in the New Year. I encourage you all to sign up and join us in Denver. Further details have been posted to the web site. I hope to see you there.

Trip to Germany

Our trip to Germany is just around the corner and Utz and Shirley Schmidt have got us all prepared for a busy and exciting time as we visit a number of German collections, museums, and the German Society's Annual Meeting. Utz has also guaranteed that the food and beer will be truly wonderful and memorable. We will let you know how it goes in the next newsletter.

Publicity Committee

Our publicity committee has done an excellent job promoting ISASC. Donna Schoenly was successful in having an article about ISASC included in the August issue of the *Maine Antiques Digest*. Shirley Schmidt, at the urging of Bob Foster, has given the *Farm Collector* three agriculture related scale articles from *EQM* which they plan to include in their publication over the next year. The editor of *Farm Collector* was delighted to receive this material. Their circulation is over 45,000. Hopefully we will pick up a few new members who will discover ISASC through these articles. We owe a vote of thanks to this hard working committee.

Vermont History Expo

Mary and Jerry Katz attended the Vermont History Expo, June 26 and 27, to help with the Howe scale exhibit coordinated by ISASC member Brooke Paige and his wife Donna. The Vermont History Expo is a two day event held at the Tunbridge Fairgrounds with the emphasis being, "all things Vermont", i.e. from cheeses to scales.



Brooke, a fanatic Vermont historian, is interested in the period from the wooden age through the Iron Age, 1820 - 1870. He

brought along Howe signs, Howe related ephemera and actual Howe scales.

His crew included the Katzes and Larry Violette, a Fairbanks employee and ISASC member. It was made up of scale company employees, mostly coming from Fairbanks, and some locals, including ISASC member Lyman Orton, owner of the Vermont Country Store. Lyman is including in one of his stores a scale museum featuring only Howe and Fairbanks scales.

On Saturday, ISASC member Alan Yale, a Fairbanks historian, stopped by the pavilion as an expo visitor. Walter Young, the last president of Howe Scale Company also spent time at the booth.

The Katz's distributed ISASC rack cards with the hope of attracting new members. Certainly, visitors seemed curious that there was a collecting group for antique scales. Once the exhibit was set-up, Jerry Katz enjoyed the time acting as an official weigh-master, offering to weigh people and document the results on a facsimile Howe weight card, as was used by Howe when exhibiting at fairs and expos in the late 19th and early 20th centuries.



Weather was less than ideal which may have kept people away Saturday; Sunday was a bit better. Our hats are off to Brooke Paige, for his enthusiasm in getting the Howe exhibit to happen and really shine.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and encourage them to contact any of our members should they have questions.

George Cahill & Molly Morrell

Portland, OR

Don & Carol Farwell

Port Byron, IL

Bryan & Barbara Negrini

Pittsburg, PA

New ISASC Website

Carol Hayden reports: "We are very excited to introduce the new ISASC website. We hope you will take the time to browse it at your leisure. The recap of the Portland Convention has been posted for all those who were not able to attend and for those who were and want to remember what a great time we all had at the convention. To get to the recap go to "Events" on the main menu at the top of the page. Then click on "Annual Convention" on the drop down menu. Scroll down and click on the [Highlights: Portland, May 2010](#) link and that will bring it up. To access the Members section click on "Members" on the main menu. That will bring up the Member Login page. Click where it says "Click Here to Sign In". A popup box will appear asking for the password. The new password for the Members section is "steelyard". Enter the password and click OK and the Members section should come up. While in the Members section you may want to go under "News" to the Euro Newsletter and

take a look at the May issue of *Fulcrum*. Below is the link to take you to the "Home Page" of the ISASC website. The address for the new website is the same as the address for the old site: www.isasc.org".

In Memoriam

Sadly, I report the passing of the following ISASC members:

Libby Everett, wife of long time member Bill Everett passed away May 27, 2010. Many members will remember getting to know Libby at the Seattle convention in 2000 when she and Bill were newlyweds. Although she was not a scale collector, Libby was a strong supporter of Bill's vision of an ISASC museum.

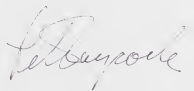
Ruth Schaeffer wife of member Ned Schaeffer, passed away on July 29, 2010. The Schaeffers joined ISASC 1994 and together attended several annual conventions and Michigan get togethers.

Dr. David Zbaraz passed away the first week of August 2010. He joined ISASC in 1996 and enjoyed collecting postal, egg and scientific scales.

Weights Wanted

I received the following message from long time ISASC member Richard Axelrood. If anyone can help him out please send him an email to richardaxe@a.comcast.net. "Hi - I am a current member of ISASC listed in the Directory. I want to buy a 4 piece matched set of Postal Scale weights - 4 oz (1-7/16" diameter) - 2 oz (1-1/4" diameter) - 1 oz (1" diameter) & 1/2 oz (13/16" diameter). The diameter is the measurement of the holes in the base and all are all 3/16" deep. The following should be the measurements of the weights: 4 oz top 1-1 1/2" & bottom 1-3 8" 2 oz top & 1-1 4" bottom 1-1 8" 1 oz top & 1" bottom 7 8" 1/2 oz top 7 8" & bottom 3 4" - If you can fill my order, please e-mail me with my cost. Thanks, Richard Axelrood."

That's all I have for now, I hope that you will continue to find the odd scale that you need to enhance your collections. Until next time keep on Scaling!
Regards,



Peter Laycock,
President ISASC



EQUILIBRIUM

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2010 ISSUE NO. 4

PAGES 3629 - 3656



Cover Picture

The measures on this issue's cover were manufactured by W. & L. E. Gurley, Troy, N.Y. and are so marked on their bottom rim. Made of nickel plated brass, their capacities are ONE PINT, ONE QUART, ONE-QUARTER PECK and ONE-HALF PECK.

They are described in the 1912 *Gurley's Handbook of Weights and Measures for the use of Sealers, W. & L. E. Gurley, Troy, New York, USA, Department P* as follows: Punched from one piece of metal and made with a ribbed strengthening bottom and a top rim. Carefully adjusted by weighing with distilled water, applying the necessary temperature corrections. They are light but rigid and may be stacked.

Patrick Kelley Collection

Thanks to Howard Cheifitz for information.

Contents

'ET' on the beam - Sir Edward Thomason?	
Michael Foster	3631-3635
Showcase	3635
Determining the Cost of Postage on Marion & Co. Postal Scales	
Stephen Barnett	3636-3637
Weights and scales in Bradford - 2	
Norman Biggs	3638-3643
Scales on Postage Stamps	
Dick Clark	3644-3651
Review	
Jan Berning	3652-3653
Notes & Queries, No. 161	3654
Showcase	3655-3656



EQUILIBRIUM is published quarterly in February, May, August and November.
© 2010 International Society of Antique Scale Collectors ISSN: 0893-2883

International Society of Antique Scale Collectors

Founded September 1976
Internal Revenue Service, 501 (c) (3) EIN 36-2976411
3616 Noakes St., Los Angeles, CA 90023
Tel 323.263.6878 Fax 323.263.3147
www.isasc.org
Directors* and Officers 2010

President Peter Laycock*
Vice Presidents Bill James*
..... Robert Jibben*
..... Jerome Katz*
..... Mary Anne Murphy*
..... Shirley Schmidt*
Secretary Carol Hayden*
Treasurer Kurt Beyreis*
Executive Secretary Jan Macho

For membership information contact
Shirley Schmidt sschmidt@avei.net
5790 N. Lakeshore Rd. Palms, MI 48465

Published with the co-operation and support of
ISASC Europe
Founded October 1993

CLARITY COMMISSIONERS FOR UNCLE AND WALLS No 1037558
www.isasce.com
Trustees* and Officers 2009-2010

Chairman Norman Biggs*
Secretary Thomas Allgeier*
Treasurer Ken Govier*
Membership Secretary Michael Robinson
Meeting Secretary Janet Scarratt
European Representative Jaap Visser
Publications Officer David Apps
Information Officer D Crawford-Hitchins
Trustee Phil Holroyd*

For membership information contact
Michael Robinson, 18 Richmond Court,
Spital Walk, Boughton, Chester, CH3 5DA

Editor: Jan H. Berning, Tel 815.895.6328 Fax 815.895.6328 JHBerning@comcast.net
Associate Editor: Clifford Lushbough Tel 303.366.5471 cplush@comcast.net

Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

‘ET’ on the beam - Sir Edward Thomason?

BY MICHAEL FOSTER

There is a unique sovereign rocker bearing the initials ‘ET’ on the beam.

Is this the work of Sir Edward Thomason? You decide.

This question and the following facts are the result of my study of an ‘ET’ stamped rocker and the ET crown makers’ mark found associated with it’. Dates quoted are supported by documented references cited throughout this document. I have used ‘c.’ [circa] when the date is within five years of a particular date and ‘about’ when I have worked from other information.

There is a unique sovereign rocker with an unusual incuse field ‘ET’ stamp on the beam from the collection of Noel and Janet Scarratt.



‘ET’ on the beam rocker

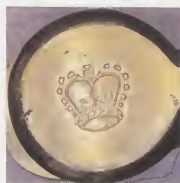


This rocker has an unknown makers’ mark crown stamp, Drawing 40, on the poise and an unusual shaped blank base. The notched platters have ‘SOVEREIGN WARRANTED’ and ‘½ WARRANTED’ stamps and gauge slots. The Fleur-de-Lys finial style is similar to that used by Midgley & Co.

Amongst rocker makers, each crown user appears to have had an individual design or several designs of crowns that they used as brand or makers’ marks for their workshop, foundry or manufactory. The crown stamp here is very similar to another Unknown rocker crown, Drawing 39, and may be different generations of the same crown:



Drawing 39: Unknown
- similar to Drawing 40



Drawing 40: Unknown
- ‘ET’ Crown



What makes this rocker particularly interesting is the incuse field 'ET' stamp found on the beam:

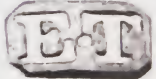


Close up of 'ET' incuse field stamp

A stamp with an incuse field was rarely used on brass standard sovereign rockers. The incuse style stamp was more typically used by silversmiths for Hallmarks, which were registered in Birmingham and can be checked at the Birmingham Assay office. This is where the author started his search for the rocker maker by making enquiries on-line about the 'ET' mark at

<http://www.silversmithsmarks.co.uk/Makers/Birmingham-E.html#ET>,

<http://www.theassayoffice.uk.com/esh/searchpage.asp> and <http://www.925-1000.com/index.html> and found the following 'Business or Sponsor Marks' used by or registered to an Edward Thomason of Birmingham, for his silversmithing activities.

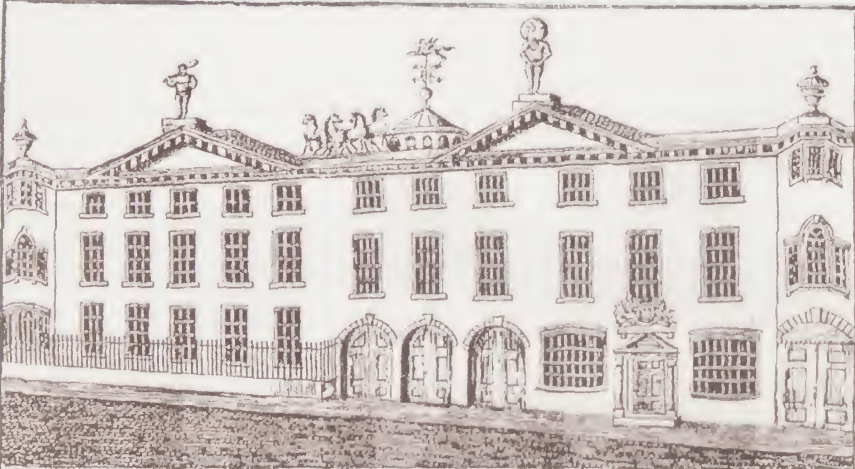
SPONSOR'S NAME	TRADE	DATE of REGISTRATION	KNOWN DATES of US
Edward Thomason	Trade not listed	20/09/1815	1814-1829
			
Edward Thomason	---	Not Registered	1817-1828
			
Edward Thomason	Trade not listed	16/08/1820	1821-1824
			
Edward Thomason	Trade not listed	11/07/1821	1821
		 	

Checking on Google for more information on Edward Thomason and his business and maker marks, the article: *Sir Edward Thomason; Silversmith, Inventor & Captain of industry* came to light (see http://www.925-1000.com/a_Thomason.html).

The article can be summarized as saying that Sir Edward Thomason (c.1772-1849), silversmith, jeweller, button maker, plater & plated-ware manufacturer, inventor and maker of gold, silver and bronze coins, tokens and medals, apprenticed at age sixteen to Matthew Boulton at his Soho Manufactory, Birmingham. By 1793, Thomason was manufacturing a wide variety of items at his Church St. manufactory and registered several 'ET' marks for his Silversmith activities.

Thomason was appointed vice-consul at Birmingham to eight countries, France, Austria, Russia, Prussia, Spain, Portugal, Brazil, Sweden and Norway. In 1818, he was made the High Bailiff of Birmingham, and in 1832, he was knighted by King William IV. His business was sold in 1835 to George Richmond Collis & Co. and he retired in 1844 and wrote his memoirs, *Sir Edward Thomason's Memoirs During Half a Century* published in 1845. Thomason died at home in Jury Street, Warwick on the 29th of May 1849 and is buried in the family vault in St. Philip's Cathedral, Birmingham.

An advertisement shows his Manufactory at Church Street c.1830 and lists some of his products:



EDWARD THOMASON'S MANUFACTORY CHURCH STREET BIRMINGHAM.		
Silver Services of all descriptions Plated D ^o ... D ^o ... D ^o ... Plated Cutlery Spears & on Steel. Fine Cut Glass for the Table... Bronzed or Mole Figures & Lustres Paper Mache Trays & Cabinets	Exclusively A Great Variety of Patent Articles and Mechanical Inventions... and His Majesty's Royal Letters Patent for the Making of Gold and Silver Mounted Medals and Coins.	The Medal Dies, of the Kings... of Celebrated Men... of the Victories of the late War... of the Elgin Marbles... of Science and Philosophy... of Society and other Medals... Jewellery & Gold & Silver Snuff Boxes. Brass and Bronzed Stair Cases.

Communion Plate, Cups & Vases in Gold & Silver.

From his memoirs, Thomason was involved with representatives of the Bank of England, and at one point made a prototype coin to show as a possible replacement for the sovereign. He also ran a Bullion conversion business, re-minting English gold coinage perhaps for some of the countries for which he was the vice-consul.

Searching in Birmingham Directories we find Edward Thomason, and after 1832, Sir Edward Thomason, and can develop a history and time-line for Thomason as a possible sovereign balance maker in Birmingham. The following is a summary of Research and Time-line from Birmingham Directories for Thomason and his Church Street manufactory.

Sir Edward Thomason

- 1815 Thomason and Jones, Jewellers and silversmiths, p.156
Edward Thomason's manufactory, Church St, and dwelling house, Colmore Row, Birmingham, p.123
Reference: *Wrightson's New Triennial Directory of Birmingham, 1815.*
- 1818 Edward Thomason, Silversmith, jeweller, button maker, plater and plated ware manufacturer, and inventor, Church St. and residence, Colmore Row, Birmingham, Reference: *Wrightson's New Triennial Directory of Birmingham, 1818*, p.128, p.154 under Button Maker, p.159 under Jeweller, p.164 under Platers and Manufacturers of plated wares, p.167 under Silversmiths.
- 1823 Edward Thomason, manufacturer, 29 Church St, Birmingham, Reference: *Wrightson's New Triennial Directory of Birmingham, 1823*, p.138.
- 1828-29 Edward Thomason, Consul, Jeweller, Church St, Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1828-9 [Part 2: Notts - Yorks & N Wales]*, p.790 under Consuls, p.797 under Jewellers – Manufacturing.
- 1829-30 Edward Thomason, manufacturing jeweller, silversmith, glass cutter, plater and manufacturer of plated articles, 29 Church St, residence, 20 Colmore Row, Birmingham, Reference: 'Wrightson's Annual Directory of Birmingham, 1829-30', p.94
- 1830 Edward Thomason, medals and coin maker, corkscrew maker, glass cutter, plater and manufacturer of plated articles, silversmith, consul for Austria, Brazils, Portugal, France, Prussia, Russia, Sweden and Norway, Church St, Birmingham.

A description of Thomason's manufactory, workshops and foundry, pp.177-181, also describing medals presented to His Majesty the King. Thomason was educated in the scientific school of Soho, with knowledge of the mechanical arts. p.296.

Reference: *The History, Topography and Directory of Warwickshire*, by Wm. West, 1830.
- 1833 Sir Edward Thomason, manufacturing jeweller, silversmith, glass cutter, plater and manufacturer of plated articles &c., 29 Church St, residence, 20 Colmore Row, Birmingham, Reference: *Wrightson's New Triennial Directory of Birmingham, 1833*, p.85.
- 1835 Sir Edward Thomason, Plater and Silversmith, Church St. and 20 Colmore Row, Birmingham, Reference: *W&W Directory of Birmingham 1835*, p.8, under platers etc., and silversmiths.
- 1835 Sir Edward Thomason & Co, Button Manufacturers, Platers & Manufacturers of Plated articles on Steel, Church St, Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1835*, p.539, p.564 - * now as Co.
- 1835 Manufactory and business sold to George Richmond Collis & Co.
- 1837 Sir Edward Thomason & Co, Church St, Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1837.*
- 1844 Retired.
- 1849 Deceased.

Did Thomason make the 'ET' stamped sovereign rocker? In comparing the 'ET' stamp on the sovereign rocker to the examples of the Thomason registered 'ET' marks, there was concern that the serifs on the E did not seem to match the serifs on the Thomason marks.

At this stage the author notes that he was looking for a possible retailer / maker in Birmingham, in an 'appropriate business' and in the 'appropriate time frame', that would be 'well enough known' to use just his initials stamped on a rocker, as sovereign balance makers like William Tabberer, using 'WT', or Thomas Simmons, using 'T.S', were at about the same time.

The best candidate for his business, time frame and reputation, who is known to have used the initials 'ET' as his registered Business or Sponsor mark is Edward Thomason. The 'ET' stamp on the rocker could well have been a quick version made to mark brass by some of Thomason's shop people and used on a trial sovereign rocker that was made in small volume and never took off as a product line. Thomason, from his memoirs, did a lot of prototyping of potential product offerings, many seem to have gone nowhere.

The 'ET' stamp being an incuse field stamp with the initials above the stamped field is very unusual for sovereign rocker makers, but very typical for silversmiths and plated-ware makers like Thomason. If it was some small unknown maker putting his 'ET' initials on the rocker then it is possible that he was also a silversmith or plated-ware maker, using an incuse field style stamp for his initials. This might have been intended to get Thomason's notice, but perhaps would have caused Thomason to take action against the user for infringing on his registered Business or Sponsor marks. There are no records of Sir Thomason defending his Business or Sponsor marks.

We may never know the answer to the question, *Is this the work of Sir Edward Thomason?*, unless a box with a label, an advertisement or something turns up that links 'ET' to the Thomason name. Readers will have to draw their own conclusions from all of this, until more information is available on the subject.

Acknowledgements

Special thanks Diana Crowth-Hitchins for her photos and assistance.

Notes & References

1. Reference my forthcoming Book: *Sovereign Balances – Standard and Non-Standard Rockers and Makers' Marks*.

Showcase



The plate on this Chicago Scale Co. *Little Detective* scale reads *U.S. Postage July 1885*. The inset shows detail of the beam end reading *Little Detective Postage*. Rates for letters, mdse and papers are listed on the beam.



This example has come to light since the article *The Chicago Scale Co.*, published in 2009 issue 1.

Les Firth Collection.

Determining the Cost of Postage on Marion & Co. Postal Scales

BY STEPHEN BARNETT



Figure 1. ▲▲ Detail of Marion & Co., Hiscock's patent unique design.

1844 and 1920, as wholesale and retail stationers and photographic suppliers. He did not take out the patent for these pillar mounted scales - that was taken out by W Hiscock in 1879 ...

Several years ago, I acquired a scale of this style, with a capacity of 16oz, and marked "Perkins and Gotto London" on the graduation plate. It is marked with the postage rates (for 1871-1885) BELOW the weight graduations (Figure 2). I recently acquired a second Marion & Co. postal scale (Figure 3) with the postage rates (for 1871-1897) ABOVE the weight graduations (Figure 4). In that case, the pointer tip not only indicates the weight of the letter, but also points to the cost of postage. That

In an article in EQM 1989, Issue No. 3, Diana Crawforth provided information on Marion & Co. and the postal scales that they made and sold. She wrote: *Marion and Co. may have made the pendulums on a stand that are found with at least six variations in design, ranging in height from six to fourteen inches with various graduated faces, various pendulous weights, and usually with a mixture of brass, gilding, and nickel on any one scale. A common feature on their scales was the little brass ball on a rod sticking out at an angle behind the graduation plate to the rotational movement of the pointer.* (Figure 1) In the caption for Figures 7&8 she further notes that *Auguste Marion had shops in London and Paris between*



Figure 2. ▲▲ Marion & Co. postal scale marked Perkins & Grotto, London with 16 oz capacity.

got me to wondering how one determined the cost of postage for the Perkins and Gotto model. Quite by accident I discovered that the cost of postage appears in the circular opening in the pointer (Figure 5). Ben Smith has a similar scale, with a larger diameter scalloped pan, in his collection (Figure 6).

This difference raises several interesting questions: Why this variation in design? Perhaps it has to do with capacity. The few 8 oz capacity models that I have seen or seen pictures of in EQM, for example, Figure 8 of the Crawforth article have the postage arc above the weight arc. Is the arc of postage rates below the arc of weights only on the 16 oz capacity models, and if so, why? What was the rule for determining the cost if part of two postage rates showed through the opening in the pointer?



Figure 3.  Marion & Co. postal scale with 4 oz capacity.

Figure 4.  Detail of weight graduations and postage rates for Marion & Co. 4 oz postal scale shown in figure 3. Barnett Collection



Figure 5.  Detail of Perkins & Grotto, London showing postage rate of 2d for a 4 oz letter.

Figure 6.  Another 16 oz Marion & Co. postal scale with replaced pan and postage arc under weight arc.

Ben Smith Collection



Weights and scales in Bradford - 2 BY NORMAN BIGGS

The first part of this article described the use of scales and weights in Bradford, from the end of the eighteenth century onwards. Bradford had a leading position in the textile trade, and in some cases ordinary scales could easily be adapted for the special requirements of the trade. For example, Hill and Brayshaw's 1866 advertisement (Part 1, Figure 5) illustrates several scales of this type. In the second part of this article we shall look at more specialized items, particularly those intended to cope with the complicated systems of measurement that were employed in the textile trade.

Systems of measurement for yarn and cloth

Yarn is made into cloth by weaving, often using different types of yarn for the warp and the weft. Both yarn and cloth were measured in ways that seem curious to us nowadays, because they were based on centuries of trade practice, rather than scientific principles.

The *counts* system for measuring the fineness of yarn is a good example.¹ Instead of grading yarn by its weight per unit length, the system worked in reverse: the *counts* was defined in terms of the length required to make a unit weight. For example, in the case of worsted yarn, the *counts* was defined to be the number of hanks, each of 560 yards, required to make one pound avoirdupois. The situation was made even more complicated by the fact that the length of a hank differed according to the type of yarn – wool, worsted, linen, or cotton. Similarly confusing was the measure for cloth, which was expressed in *yards*, although a yard did not mean a square yard. A yard of cloth was a piece one yard long from a roll, the width of which varied: it was often (but not always) 54 inches or 1½ yards. More details of these curious measures will be described below.

Clearly, textile manufacturers needed help in order to carry out the complex calculations involved in their trade. In 1884, Thomas Ashenhurst, the Head Master in the Textile Department at Bradford Technical College, wrote as follows in the preface to his *Treatise on Textile Calculations and the Structure of Fabrics*.²

The great diversity which exists of the systems of indicating the weights, or as they are termed, the counts of yarn, of what are known as the sett systems, and generally of the modes of calculating yarns and fabrics, have made this one of the most difficult subjects with which the manufacturer has had to deal.

Ashenhurst's book explained in detail how to do the calculations. But there was no aesthetic value in this miserable branch of arithmetic, and it was natural that people should look for ways of avoiding it altogether. One way was to use tables that enabled the user to look up the answer to a common calculation, for a range of values of the parameters. An example, also published in Bradford in 1884, was a set of *Practical Yarn Tables*³ compiled by S. Tankard, the title page of which is shown in Figure 1. Tankard's tables were used in the context of trade practices that were well understood by the 19th century practitioners, but the modern reader will find them very obscure.

PRACTICAL
YARN TABLES,
FOR
WORSTED, FANCY, AND UNION
YARNS,
From No. 1's to 144's,
(WORSTED COUNTS,
CALCULATED TO THE NEAREST SIXTEENTH OF AN OUNCE,
BY
S. TANKARD, Bradford.

ENTERED AT STATIONERS' HALL, LONDON.
ALL RIGHTS RESERVED.

BRADFORD:
CHARLES GREENING, PRINTER, ALBION COURT, KIRKSGATE.
1884.

Figure 1. Title page of Tankard's tables 1884.

Horatio Lord's apparatus

Another way of avoiding complicated calculations was to combine a set of tables with specially-designed weighing apparatus. One of the earliest examples was invented by Dr Frederick Clayton, a member of the firm of F. & J. Clayton of Navan, Ireland. It consisted of a set of hand-held scales, with weights, tables and a steel die, and was sold under the imposing title of 'The Desiderata of the 19th Century'. Details of this apparatus can be found in the *EQM* article by Michael Crawford.⁴

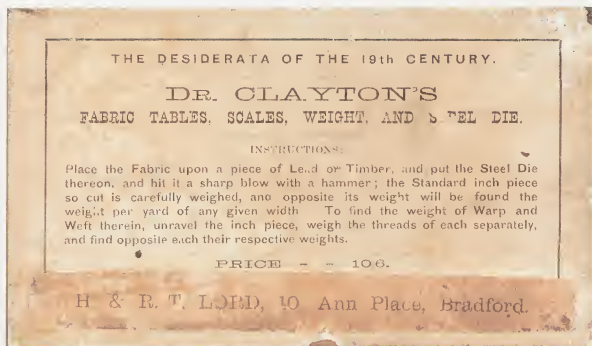


Figure 2. Clayton's apparatus sold by the Lords.

Clayton's apparatus seems to have met with the approval of the textile trade, and in due course it was being sold in Bradford by H. and R. T. Lord (Figure 2). The Lords were interesting characters. At the time of the 1881 Census, the family was living in Halifax, its head was Mrs Hannah Lord, and one of her sons, Horatio,

Apparatus for Testing the Weight per Yard and per Square Metre of Cloths and Counts of Yarns,

From a Small Sample.

Indispensable to Manufacturers, Merchants, &c., of
Cloth, Woollen, Linen, Jute, Hemp, Flannel,
Army, Navy, Police, Railway, Canvas, and Sail Cloths.

USED IN GOVERNMENT DEPARTMENTS.

THE Apparatus consists of Scales, Weights, 1, 2, and 4 Square Inch Cutting Templers and Book of Tables
By weighing an inch sample, the Weight in Ounces of a yard of cloth, any width, from 19 inches upwards, Weight per Square Yard in Ounces and in Grammes, the Weight per Square Metre in Grammes and the Counts of Warp and Weft Yarns, may be accurately ascertained without any calculation.

THREE THOUSAND SOLD.

Price - 25 Shillings, Carriage Paid.

To Colonies and Foreign Countries, 27/- Carriage Paid.

To be had only of

H. LORD, 10, Ann Place, BRADFORD,

ENGLAND.

Figure 3. Label on lid of Lord's apparatus.

was described as a professor of music. But by 1887 the family was living at 10 Ann Place, Bradford. Horatio is variously described in the local directories as a journalist, merchant, and (with his brother R.T.) editor of the *Journal of Fabrics and Textile Industries*.⁵ In 1895 he submitted a patent application (number 22490) for *improvements in frames for making balls, dust brushes, and other articles of yarns, paper, or other material*. It is likely that the Lords' move to Bradford was prompted by its position as the established centre of the wool and worsted trade, a status that was confirmed by the Bradford Corporation Act of 1887. Among other things, this Act was responsible for the setting up of the Bradford Conditioning House, where all kinds of tests on yarns and fabrics were carried out.⁶

Around the turn of the century the Lords began to produce their own weighing apparatus for use in the textile trades. Like Clayton's, it was sold in a box with a bold advertisement pasted on the top of it (Figure 3). The apparatus consisted of scales, a stand for suspending them, ordinary weights denominated in grains, special weights, templates, and a book of tables (Figure 4).



Figure 4. Lord's apparatus.

In order to determine the mass of a sample of cloth in ounces per 'yard', one square inch was cut using the template and weighed using the ordinary grain weights provided. The answer, for various widths of cloth, was then found by consulting the tables. The tables also gave the result in ounces per square yard, and grams per square metre.

In order to determine the counts of yarn, the special weights were used. They were made from thin aluminium, and were stamped with the letters C (cotton), W (worsted), L (linen) and WS (woollen skeins). Their masses were, approximately,

$$C = 15 \text{ mg}, \quad W = 22 \text{ mg}, \quad L = 42 \text{ mg}, \quad WS = 47 \text{ mg}.$$



Figure 5. Harrison-Parkinson's weights for cloth and yarn.

Suppose it was required to find the counts of some yarn that had been woven into cloth. A piece of the cloth would be cut using the square-inch template, and the threads separated, thus obtaining a number of 1-inch lengths. The weights were chosen so that the number of these inch-lengths needed to balance the appropriate weight was equal to the counts.⁷

Weights for use with laboratory balances

By the turn of the century most textile factories would have had a room set aside for technical purposes. It would be equipped with various machines, including an accurate balance, similar to the ones used in scientific laboratories. The trend towards a scientific approach meant that apparatus more sophisticated than that sold by Clayton and Lord could be used. The Bradford firm of Harrison, Parkinson & Co. supplied some of the equipment needed. In 1912 they were described⁸ as *pharmacists and chemists, dealers in photographic and scientific apparatus, and laboratory furnishers*. Among the goods they sold was a set of small weights in a cloth-covered cardboard box (Figure 5). This box contains 12 weights, all made of thin aluminium.

- Three weights used for estimating yarn counts. They are stamped COTTON & SILK, WORSTED, and WOOLLEN SKEINS. They weigh approximately three times the corresponding weights in Lord's apparatus, suggesting that the yarn was cut into three-inch lengths.
- Eight weights marked with several numbers, the most obvious being the sequence 20, 10, 5, 4, 2, 1, ½, ¼. The complete set of marks on the largest is as follows.

20
OUNCES
54 x 36
452

The 54 x 36 clearly refers to a yard of cloth with the standard width of 54 inches, and the implication is that if a sample of cloth balances this weight then the 'yard' will weigh 20 ounces. This is confirmed by the fact that the corresponding value in grams per square metre is 452. The other weights are marked proportionately, so we have 10 / 226, 5 / 113, and so on. The actual mass of the weights suggests that the sample of cloth was cut using a template 2 square inches in size.⁹

- A weight marked 200 / GRAMMES / ? METRE, which is possibly a later addition. It fits in to the system for estimating cloth set out in the previous paragraph.

A very similar set of weights is shown in Figure 6. They are contained in wooden box with the words 'W & T. AVERY Ltd, 2 Harris St, Leeds Rd, BRADFORD' stamped faintly inside the lid. The weights follow the

Harrison-Parkinson set, but with two alterations to the sequence of cloth weights. The size of the 'yard' is stated as 56 x 36 instead of 54 x 36, and the weights themselves are roughly four times heavier, suggesting that the sample in this case was 8 square inches.

Figure 6. ➤ Avery's weights for cloth and yarn.



Weighing in drams

As we have seen, the grading of yarns and fabrics entailed the use of weights with small denominations. In Lancashire, where the cotton trade was dominant, the troy penny-weight (1.55 g) was much used. This made calculation even more difficult, since the definition of the counts was in terms of the *averdepois pound*.¹⁰ In Yorkshire, where wool and worsted were dominant, the *averdepois dram* (1.77



Figure 7 ▲ ▲ Parson's decimal dram weights.

g) was used for small weighings. There were 16 drams to the ounce and 16 ounces to the pound, so 256 drams made one pound. This dram (not to be confused with the apothecaries drachm) was not used much for other purposes, and the fact that it had found a useful application was thought to be worthy of comment by Chaney.¹¹ It was particularly convenient for the 'Yorkshire Skeins' system of estimating wool, since the counts of a sample of wool in that system was the same as the number of yards that weighed one dram.¹²

Unfortunately, there were many different local systems of grading wool, even in Yorkshire. Ashenhurst¹³ says that in the Sowerby Bridge area the manufacturers had defined the counts of wool as the mass of 80 yards in drams. In practice, smaller lengths such as 2, 5, 10 or 20 yards could be weighed in drams, and the counts obtained by multiplication. This is a direct system, and it avoids the nasty division sums associated with the indirect 'hanks per pound' method. However, given the existing variety of systems, another one was perhaps not ideal.

The widespread use of the dram in the textile districts of Yorkshire has left a trail of evidence in the form of small weights with strange denominations, and these often puzzle collectors. A typical example is a box of weights (Figure 7) made by Parsons of Bradford, a firm whose history was described in the first part of this article. Their 1912 advertisement¹⁴ refers to *weighing apparatus for all trades*, as well as special equipment for the textile trades. The box shown here belongs to the latter category. It has an ivory plaque on the lid reading S. PARSONS & CO. Weighing Machinists, 7 Aldermanbury, BRADFORD, and it contains:

- a set of knobbed brass weights denominated in drams: 16, 8, 4, 2, 1, 0.9 and 0.8 (there is space for 0.7 drams, which is missing);
- a set of rectangular white metal weights, also denominated in drams: 0.6, 0.5, 0.4, 0.3 (missing), 0.2, 0.05, and 0.01 (some possibly not original);
- a rectangular white metal weight marked 12½ grains.

The decimal fractions of the dram could have been intended for use with the 'Sowerby Bridge' system, as mentioned above, or for other types of calculation with wool or worsted yarn. The 12½ grain weight was specifically intended for testing worsted yarn, as explained by Bradbury.¹⁵ If the counts was alleged to be 20s, then 20 yards should balance this weight, and similarly for any other value of the counts.

Other weights for decimal parts of a dram are quite common. They are frequently made from rectangular pieces of brass (Figure 8), in the denominations $\frac{9}{10}$, $\frac{8}{10}$, $\frac{7}{10}$, $\frac{6}{10}$, $\frac{5}{10}$, $\frac{4}{10}$, $\frac{3}{10}$, $\frac{2}{10}$ and $\frac{1}{10}$ drams. The denomination is indicated in various ways, such as $\frac{9}{10}$ DR AV, or $\frac{9}{10}$ DRAM, or 0.9 DRAM, or .9 DRAM.

Conclusion

From about 1930 onwards the textile trade went into gradual decline, and by the 1980s it was no longer a dominant force in the economy of Bradford and the nation. The Bradford Conditioning House was closed around 1990, and twenty years on there is still uncertainty about the future of this historic building. The humbler items described in this article may therefore prove to be the true lasting reminders of the great days of the Bradford textile industry.

Notes and References:

1. Norman Biggs. 'A tale untangled: measuring the fineness of yarn', *Textile History* 35 (2004) 120-129.
2. T. Ashenhurst. *Textile Calculations and the Structure of Fabrics*. Huddersfield and Bradford, 1884.
3. S. Tankard. *Practical Yarn Tables*. Bradford: Charles Greening, 1884.
4. Michael Crawforth. 'Yarn, cloth, and roving scales – 2'. *Equilibrium* (1988:4) 1168-1176.
5. By the time of the 1901 Census Hannah Lord had died, the head of the family was Barbara Lord (Horatio's elder sister), and Horatio was described as a textile journalist. Some later versions of the Lords' apparatus bear the name B. Lord.
6. H.J. Chaney. *Our Weights and Measures*. London: Eyre and Spottiswoode, 1897. The relevant sections of the Act are printed in the Board of Trade's 1887 Report on Proceedings under the Weights and Measures Act (Appendix 4), and a list of the operations carried out at the Conditioning House can be found in the Report for 1906/7 (Appendix 12).
7. For example, a hank of worsted yarn is 560 yards, so if the counts of the yarn is N, then $560 \times 36 \times N$ inches should weigh one pound averterdepois (453.6 g). Therefore N inches should weigh $453.6 / (560 \times 36)$ g, about 0.022 g or 22 mg, which is indeed the mass of the weight marked W.
8. *Post Office Directory of Bradford*. Bradford: Byles, 1912.
9. The actual mass of the weight marked 452 is 0.57 g, so the area of the template must have been $0.57 / 452$ square metres, or about 12.9 square centimetres. This is the same as 2 square inches, suggesting a 2×1 template.
10. Biggs, as in note 1.
11. Chaney, as in note 6, page 138.
12. The Yorkshire Skeins system arose from the fact that at one time wool was weighed in terms of an ancient weight-unit known as a *warten*, equal to 6 pounds averterdepois. The practice of estimating the counts by finding the number of yards that weigh one dram implies that the corresponding length-unit, known as a *skein*, was equal to $6 \times 256 = 1536$ yards. By the end of the 19th century it was customary to reduce both units by a factor of 6, so that the length-unit was a 'hank' or 'skein' of 256 yards, and the weight-unit was one pound. The *warten* is probably a corruption of 'quartern', signifying one-quarter. A.F. Barker (*Mathematical Gazette* 10 (1920) p.91) suggested that it meant one-quarter of 'the old 24 lb stone'. I have been unable to find any other references to a stone of that size.
13. Ashenhurst, as in note 2. F. Bradbury (*Calculations in Yarns and Fabrics*, Halifax, 1900) attributes this system to the 'Halifax Rural District'.
14. Byles Directory, as in note 8.
15. Bradbury, as in note 13, page 71. The equivalence depends on the fact that the hank of worsted is 560 yards, and one pound is 7000 grains. Thus if N hanks weigh one pound, N yards should weigh $7000 / 560 = 12\frac{1}{2}$ grains.

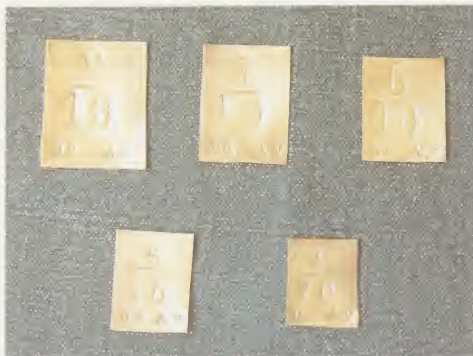


Figure 8. ▲▲ Decimal dram weights in brass.

Scales on Postage Stamps

BY DICK CLARK

This article is the result of this author's desire to join together two of his hobbies. The genre of stamp collecting is merged with the genre of scale collecting. The stamps referred to in this article and used to illustrate this thesis were all purchased on eBay. They were found by searching for "scales" in the category of "stamps". If the stamps referred to below are not used as illustrations, the Scott Catalog Number for that stamp is shown.



Figure 1. ▲▲

In a sampling of 57 stamps 35 countries and the UN Postal Service, 11 different types of scales are displayed on stamps or on envelopes. The most common type of scale shown on postage stamps is the equal-arm beam scale. Generally this has something to do with the "Scales of Justice" as shown on the 1999 Bulgarian stamp that shows the blindfolded "Lady of Justice".(Figure 1) That stamp (the upper right-hand stamp in the block of six) was issued to commemorate the third Bulgarian state anniversary. Often the scales of justice is shown just as a line drawing with no artwork as in the 1963 Iran stamp issued for the Universal Declaration of Human Rights.(Figure 2)



Figure 2. ▲▲

The size of the scale of justice may be very small and is on the stamp to give credence to the fact that whatever the subject of the stamp is, it is something that is known for fairness and justice. And the real purpose for the scale of justice may not be told as illustrated by the 1976 stamp from San Marino showing a person holding a very small scale.(Figure 3)

The reasons that stamps are issued are a study in themselves as they cover a range of topics from the stamp issued by France in 1967 for "The International Council of Accountancy" (Scott1193) to one issued in 1961 by the United States Postal Service to honor the 50th anniversary of Worker's Compensation in the state of Wisconsin.(Figure 4)



Figure 3. <<

Figure 4. >>



Canada issued a 39 cent stamped envelope that shows an English ladder scale, an English roberval letter scale and a German pendulum scale.(Figure 5)

Figure 5. <<<





Figure 6. ▲▲



Figure 7. ▲▲

Babies are popular on stamps. Austria (Figure 6) in 1954 and Nauru (Figure 7) in 1983 issued stamps showing babies being weighed on platform scales. But Morocco in 1984 issued a stamp for UNICEF showing a baby hanging from a dial-faced spring balance.(Figure 8)



Figure 8. ▲▲

Monaco in 1963 issued a stamp for the UN showing children being weighed on an equal arm beam scale.(Figure 9)

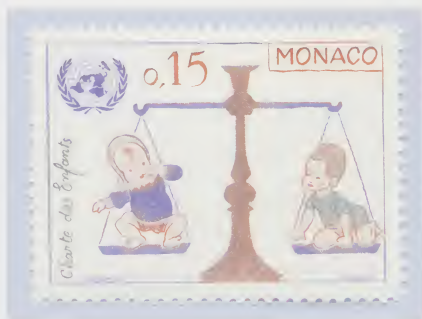


Figure 9. ▲▲

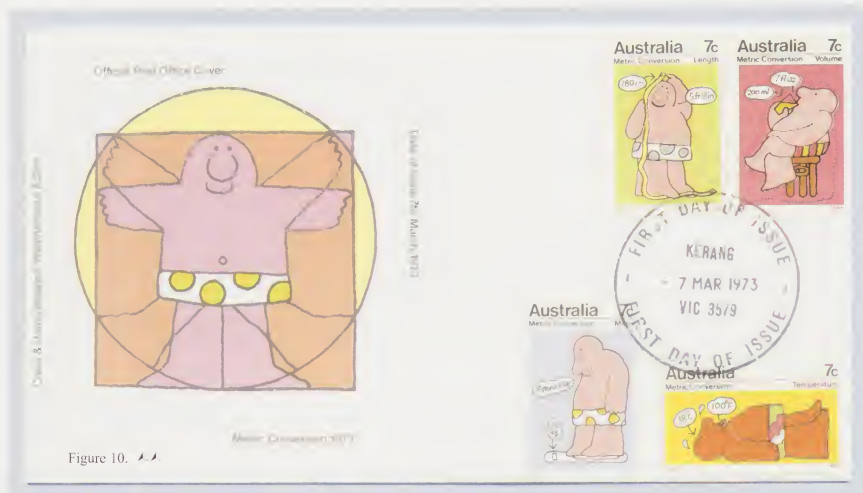


Figure 10. ▲▲

Figure 11. ▼▼



In 1973, Australia issued a series of stamps for their conversion to the metric system. Each stamp shows a cartoon person doing something to illustrate length, volume and temperature. For weight or mass, he is standing on a platform bathroom scale. (Figure 10)

Sometimes a little humor can be seen in a stamp. In 1938, Hong Kong issued a stamp with an equal arm beam postal scale where the beam was not level as it is seen on most stamps. The letter in the left hand was overweight and this stamp was issued as a postage-due stamp. (Figure 11)



Figure 12. ▼▼

Figure 13. ✂

Religion has a place with scales on stamps. Israel issued a stamp showing an equal-arm beam scale for Shegalim and Prayer as shown in works of art on display in Jerusalem at the Jewish National and University Library.(Figure 12)

For Easter in 1984, Bophuthatswana, part of South Africa, issued 4 stamps showing scenes from the life of Jesus. One of these illustrates the Gospel of Mark 11:11 where Jesus is driving the money changers and their coin scales out of the Temple in Jerusalem.(Figure 13)



Scales show up on stamps that are issued to show various professions and occupations. One for accountants is referred to above. Australian Antarctic territories issued a stamp in 1968 showing scientists using a platform scale to do ice compression tests (Scott number L-17).

Germany, in 1991, issued a stamp showing an ancient pharmacist weighing out medications (Scott1620).



Figure 14. ✂

Figure 15. ☼ ☼

Social issues and human rights are popular topics for stamps. These stamps often contain some type of equal-arm beam scale to show how much that particular cause or issue was into the equal rights and justice.

In 1958, the Republic of China issued three stamps that show the Constitution, a ballot, and the scale of justice (Scott 1214, 15, and 16).

The African country of Burundi, for UNESCO, issued six stamps that all had scales of justice. These stamps had to do with human rights and two of the stamp showed pictures of Abraham Lincoln.(Figure 14)

Medicine and the search for the cure for current problems such as AIDS and cancer are fertile grounds for the development of new stamps. October 21st and is the global Iodine Deficiency Disorders Day and in 2001, the India Department of Posts issued a stamp to illustrate the need for iodine in every person's diet. This stamp shows a merchant using an equal-arm beam scale in a transaction.(Figure 15)

The postal stationery known as first-day cover allows more detail regarding scales. Sometimes this detail may be in the cancellation as well as a stamps. Four of these covers are shown as illustrations: a UN Postal Service stamp honoring the International

Figure 16. ☼ ☼



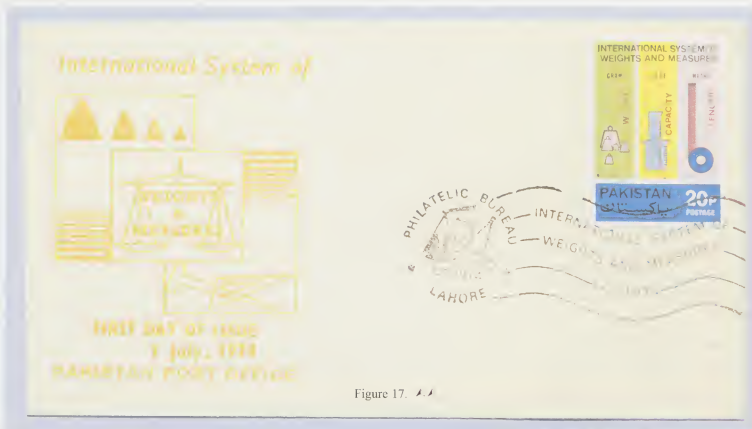


Figure 17. . .

Court of Justice (Figure 16); a first-day cover from Pakistan regarding an International System of Weights and Measures. This stamp shows scale weights rather than scales (Figure 17); another one from Pakistan for the Centenary of the High Court of West Pakistan (Figure 18); and one from Uruguay showing the country's national symbol where the scale is part of that artwork.(Figure 19)



Figure 18. . .



Figure 19. / /

The subject matter for stamps is a commentary on life in this world. Stamps illustrate the world of nature; the history of peoples past and present, and their cultures; and present-day topics from Michelangelo to Michael Jackson. As long as stamps are used to illustrate causes and crusades and to show that the rule of law and justice is important, what better symbol can there be than the scales of justice?

The following is a first-day picture postcard issued by the Netherlands on July 1, 1992. It is the perfect end for this article.



Review

British Scale Makers 1620-1920: The Crawforth Index, compiled by D F Crawforth-Hitchins, © 2010 ISASC (Europe). Available from D Apps, Fern Farm House, West Winch, King's Lynn, Norfolk, PE33 0PD at £25 including post & packing, or for subsequent copies, at £20 each.

Michael and Diana Crawforth spent over 30 years devoted to the study of scales and weights and their British makers. During those years they kept detailed notes about the makers on small index cards, as there were few personal computers around when their research began. These cards, numbering about 6000, have been painstakingly scanned, converted to PDF format and burned onto compact disks so that we may all glean from the Crawforth's extensive knowledge. The 30 years of information contained on those files is invaluable to us as collectors and to the world of metrology as a whole. No two people have been more committed to the study of British scale makers than the Crawfords and these notes show how very meticulous they both were. We are indebted to them for this wealth of information and the time it had to have taken to record it.

BRITISH SCALE MAKERS 1620-1920 THE CRAWFORTH INDEX



Over thirty years ago Michael and Diana Crawforth began to collect information about British scale makers. The information was written on file cards, eventually numbering about 6000. In order to safeguard this unique resource the cards have been converted to PDF files and are on this compact disc.

Since receiving the CD in the mail, I have had several opportunities to use and explore its vast amount of information. The CD contains a contents file in PDF that reads as follows: *In addition to this Contents file, the CD contains 25 folders. There are 24 folders named CD-A, CD-B, and so on, containing data files for names [of makers] beginning with the corresponding letter of the alphabet (there are no names beginning with X or Z).*

There is also a folder named Docs containing the following four files.

1. *A copy of the printed instructions for Using the CD.*
2. *Publication Data including the copyright declaration.*
3. *The Author's Introduction.*
4. *A short guide to some Additional Sources.*

The information on numerous scale makers is included on the CD and they are arranged in alphabetical order within the alphabetical folders. Information on the index cards is hand-written in the order that it was found by the authors rather than in date order from earliest to latest. Each card includes manufacturer/retailer, dates, where found, manufacturer's marks, type of scale and use of scale. Some index cards list several different scales or weights by a given maker while some list a single scale or weight. All of this information is depend-

CAAD 1
 SETTON & DURWARD S&D   1901 - 17

1) 117 & 118 Livery Street, Birmingham
 2) Works. Benson rd, Soho, —"
 3) 36 x 37 (or 57) George St, Birmingham.

Scales & weights. 1st Address Kelly's dir 1910, 1901, 1913.
 Letter scale mfr. 1st & 2nd address. Kelly's 1917

"Patentes & Mfrs. of Stationers' sundries" - Registration Records 1909
 Ant Nouveau decorative style Roberval letter scales } MAC Colln
 with postage rates 1897-1915 and Regd No 540718 } No 82
 Cast iron base, brass plated. N.B. Reg'n was taken out }
 by Setton & Durward in 1909

See 'CRITERION' See S&D 2/5/4

Figure 1. ➤ On this index card concerning Setton & Durward the company name is followed by their different makers' marks and dates of business. The following lines indicate addresses in numeracle order as found. Next are dates of business as found by the authors. Note that 1909 is after 1917. Then there is a referral to another card within the index for further research.

The bars at the top from left to right on this example indicate 1800-1900, Post-1900, Birmingham arca, Letter scale maker, and Spring balance maker respectively. The index contains two other cards entitled Setton & Durward which contain other information about this firm.

Diana informed me, after this was written, that their dates have been extended to 1923, so research is ongoing!

ent on how extensive the information is that the Crawforths have found up until now. It is stated, in the introduction that the information was gathered as a private source of reference, rather than a shared resource and that it is a work in progress. Readers, collectors and researchers are encouraged to send unrecorded information to Diana Crawforth-Hitchins so that the cards can be updated with new information.

While the information included in the index is vast there are some improvements that might have made it more user friendly. Each card must be opened and viewed independently rather than paging through them like a book. Had each group of cards pertaining to one maker been scanned together, as one PDF file, the pages could have been more book or index-like as a research tool. Due to the fact that the original cards were written in pencil and long-hand some are difficult if not impossible to decipher. Utilizing a typed text format rather than a PDF scan would have permitted all words to be clear and easily readable. The bar coding at the top and sides of the cards are difficult to decode. The original cards were intended to be viewed as an index card file and as such would be stacked in a file drawer one behind the other. If this were the case the category bars at the top and sides of the cards would easier to see in order to better determine their spacing and therefore to understand. I found that printing out the page explaining the categories helped, but for extensive research a card-sized map showing the location of each bar and its meaning would be quite helpful to keep at hand.

The Crawforth Index contains information that was collected from years of research in antique shops, flea market stalls, auctions, books on scales and weights as well as from private collections in many parts of the world during a period of almost 40 years. The fact that it has been made available to those of us who collect scales is an invaluable resource available at our fingertips, if we add this index to our libraries. I highly recommend that you purchase this extremely valuable resource CD and that you learn to use it to help in your research. It is a gift of knowledge that you can not afford to pass up.

JAN BERNING

Notes & Queries

FROM LESLIE MUNN

N & Q No. 161

Enclosed are some photos of a miniature Beam Scale which I recently bought in Dorchester Market for £10. The dealer I bought it from knew nothing about them and nor do I. There are no markings that I can see. From the enlarged detail you can see they are very well made so I wonder if they are an "apprentice piece" with a combined swan neck and box end.

Does anyone have a similar item or can they shed any light on the origin of such a piece? I wonder if there were any miniature weights!

Answer:

It is believed, as it has deeply domed pans, that your diminutive scale was manufactured to weigh diamonds. It is not British but most likely was manufactured on the European continent and dates from the same period as the swan box end shown in figure 19 on page 57 of *Crawforth's Handbook of Old Weighing Instruments*.



Figure 1. ✦✦ The small scale (approx. 6cm long) is shown next to set of scales by Benjamin Payne of circa 1840.

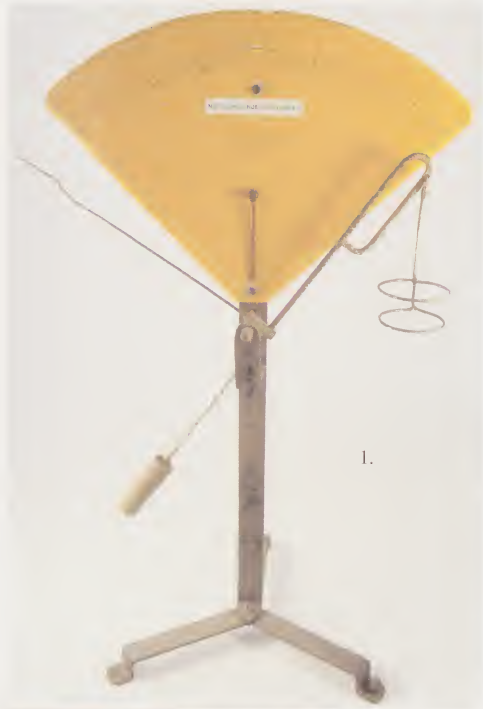
Can any European member shed light on this tiny scale's origin? Please let the Editor know so that an answer may be posted in the next issue of EQM.

Figure 2. ✧✧ Beam size is a mere 6 cm (2 1/2 inches).

Figure 3. ✦✦ Detail of the beam ends, fulcrum, pendant and pointer.



Showcase



1.



2.



3.

1. This pendulum egg scale marked REFORM and ZEDDAM was manufactured for or by the Pas Reform Hatchery in Zeddum, the Netherlands. It measures 18" tall and has a 90 gram capacity. Barbara Grygutis Collection.

2. The cast iron candlestick spring scale was manufactured by Chatillon. It measures 11" tall and has a capacity of 12 ozs. Kurt Beyreis Collection.

3. This cast iron toy computing scale is marked Toledo and was probably manufactured by Arcade. It has a capacity of 5 and computes values of 2, 4 and 6 cents. The back of this 4" tall scale reads No Springs - Honest Weight just like the large Toledo scales. Phil Wehman Collection.



4.



5.

4. Gilded Mordan roberval letter scale with decorative moths, carved from semi-precious stones, affixed to the base. The base measures 7" by 4 1/2" and it is 6 1/2" tall. ISASC Collection.

5. National Store Specialty manufactured this small computing candy scale to advertise the Walla Walla Gum Co. Made of cast iron and nickel plated brass it measures 10" tall by 9" wide, has a 2 lb capacity and computes costs per lb from 10 to 60 cents.

Phil Wehman Collection.

6. Marked NB Deposé, this pendulum postal has a Cloisonné framed alabaster base. It has a capacity of 2 ozs and measures 5 1/2" tall. (NB was the mark of Narcisse Biais) Mary Ann Murphy Collection.

7. Chatillon manufactured this small claw-foot scale with a rotating brass dial. It measures 5 1/8", has a 4 1/4" diameter plate and a capacity of 500 grams. The rotation permitted adjustment for an additional pan or tare. Mary Ann Murphy Collection.

6.



7.





A Balanced View

Well, we are coming to the end of another successful year for ISASC. We had a great convention in Portland hosted by Dick and Peggy Clark, a wonderful trip to Germany arranged and led by Utz and Shirley Schmidt and the usual regional meetings in Michigan, Illinois and for the first time this year in Tennessee. The ISASC Collection, under the tutelage of Mary Anne Murphy, continues to grow through generous donations by our members. We have a new and improved web site skillfully developed under Carol Hayden's leadership. Again this year we attracted a good number of new members. I think that is pretty good. Your society continues to be vibrant as we as a collection of 'Scalies' continue the quest for the next great find. I would like to thank your board and all committee members for the hard work they have expended on our behalf.

Election of Officers

It is time again to ask for your support in voting for the election of officers of ISASC. Please fill out the enclosed ballot and return it in the provided envelope. Bob Jibben has put his name forward in nomination for President of ISASC. Since becoming a member of the board in 2005, he has been responsible for EQM and convention oversight. Jerry Katz, a long term board member responsible for Research and Reply inquiries, has agreed to seek another term as Vice President. Carol Hayden has served as Secretary and ISASC Web Site Editor for the past two terms and has agreed to put her name forward for reelection as Secretary. Peter Laycock has agreed to serve in an advisory capacity as Past President as a non-voting member of the board.

President,

Bob Jibben, (term June 1, 2011 to May 31, 2014)

Vice President,

Jerry Katz, (term June 1, 2011 to May 31, 2014)

Secretary,

Carol Hayden, (term June 1, 2011 to May 31, 2014)

Capital Campaign Update

By now you should have received the letter sent out in late September kicking off our Capital Campaign for the endowment of the ISASC Collection. The letter described the vision of someday funding a scale museum and explained the vital importance of funding this mission to preserve antique scales for future generations. I'm sure you carefully read the letter and are currently considering how you want to be a part of this legacy.

We are very excited with the initial response from our members. Les Firth, Capital Campaign Chair, reports that as of the end of October we have received 24 donations totaling \$4050.00 in

cash and \$1000.00 in stock. This is a great start in such a short period. We know we have a ways to go to reach our goal, but these early figures are encouraging and reveal the depth of support for this project. In addition to the cash and stock contributions, we have been given assurance of donations of two major scale collections, totaling over \$80,000.00 in value. These two collections will significantly increase the diversity and assortment of scales and weights in our present collection.

Normally at this time of year you would be receiving the annual solicitation letter for the Benefactor Fund. In order to allow members to maximize their contribution to the Capital Campaign, the ISASC Board has decided not to send out this letter at this time. However, since many of you have made annual contributions to the Benefactor Fund for a number of years, you are welcome to continue to contribute to this fund again this year. Remember, the Benefactor Fund contributes to the regular operating expenses of the society and those funds are separate from the funds of the Endowment and Capital Campaign. If you wish to contribute to the Benefactor Fund, simply include your donation with your dues payment along with a note stating your intention.

Most of us are bombarded this time of year for contributions to many worthwhile organizations and must decide where to allocate our charitable donations to best support the activities and programs that we believe in. We hope that when making these important decisions you will value what the Capital Campaign is trying to achieve and donate accordingly. We urge those of you planning to contribute to do so before the end of the year to maximize your tax deduction.

License Plate Roundup

Mary Katz sent me the following message adding to our roundup of special scale related license plates. "Jerry's license plate is SCALES and mine is WEIGHTS. We had that in MD too and at one time when one of our daughters needed to register her car under our policy we told her we were going to get MEASURE as her license. 'NO WAY' she said. We once stopped at a light and the license of the truck next to us was SCALE (a scale company). I like WEIGHTS as a license-- maybe they think I am a weightlifter and they keep clear of me. Regards, Mary"



Phil Wehman reports "Tennessee only requires state issued plates on the rear of the vehicle leaving the front location for school colors, city identification, advertising, etc. We chose to have an ISASC plate made by a local sign maker. They were able to scan in our logo and laser cut the design. Over the years I have had several made of various colors on all cars. The design still attracts attention and I have had a number of people ask the origin."

Denver 2011 ISASC Convention

Cliff and DeVee Lushbough have all the plans in place for the convention next May in the beautiful mile high city of Denver, Colorado. As usual it promises to be a highlight of the 2011 calendar. Registration forms will be going out early in January and will be posted on the web site. Scheduled for May 19 to May 23, book early, we look forward to seeing you there.



Trip to Germany



to visit scale collections and to enjoy some of Germany's historical sites. The above picture on the left is a group shot taken at the Museum of Scales & Weights in Onstmettingen and the one on the right is one of ISASC members Bev Moss, Jaclyn Young, Judy Cupit and Elaine Firth mingling with some of Balingen's finest cast in bronze.

The following journal prepared by Donna Schoenly will give you the real flavor of our wonderful excursion.

Well, we are back. What a wonderful trip it was! Thirty-three of us saw and bought scales, visited several museums, attended the German Scale Society's meeting, drank a lot of beer and ate a lot of schnitzel. We made many new friends. We stayed several days in the town of Balingen where the head office of scale maker Bizerba is located. From there we took day trips



THE GERMAN SCALE ADVENTURE

Magnificent, Unbelievable, Phenomenal, Fantastic and WOW were just a few of the words heard over and over again during the 10 marvelous days that 33 ISASC "Scalies" spent walking and busing from place to place in Germany. We all gathered October 13th in Munich and continued traveling to Balingen, Rothenburg and Frankfurt. Not only did we see scales and weights of all sizes and shapes, but the beautiful scenery, water falls, vineyards, mountains, valleys and castles steeped in history made for a very memorable trip. Although the sun hid behind the clouds and rain drizzled much of the time, our spirits remained high.

Many, many thanks to Utz Schmidt, Shirley too, for the enormous amount of time and energy they spent in planning this German adventure.

Our first official event was dinner at the Hofbräuhaus, the famous Biergärten in Munich. It was a treat watching traditional German dances and listening to German music while enjoying good food, drink and fellowship with friends.

Thursday morning we visited our first castle, Neuschwanstein, the model for Disney's famous castle, before arriving in Balingen, our headquarters for the German Scale Club Meeting.

Friday morning began with a short walk and tour of the Bizerba Scale Plant. The tour through the Plant demonstrated to us the process of how a modern day scale is made from start to finish. Scales made at the Bizerba plant are sold all over the world.

Trunk sales of scales and weights had everyone scurrying around the hotel parking lot Friday afternoon. Or, was it the cool, damp day that had us scurrying???? In any event treasurers were found. BUT wait, isn't the Scale Show and Sale tomorrow?

Saturday everyone was eager to be at the Scale Show when it opened at 9:00 am. Scale sales were brisk and word spread that a 14 pound wool weight, a set of 56, 28 and 14 pound bell shaped test weights and many small rare weights from India were just some of the items purchased at the show. The afternoon was devoted to the German Club's educational seminars. The first one featured ISASC's own Utz Schmidt and Greg Moss. Their program highlighted their ongoing research of the Stimpson Scale Company. The second speaker was a Frenchman who spoke on Identifying Scales based on their various beam ends.

Sunday was a full day of viewing SCALES at museums. Four museums were on the docket with a visit from the Mayor of Balingen and refreshments before lunch. The delicious soft pretzels with BUTTER in the middle along with CHAMPAGNE, sometimes mixed with orange juice, kept us fortified as we went from one museum to another. The Town History Museum was museum #2 and featured early replicas from the day to day life in Balingen. In addition there was a special exhibition on the American Wild West. We then boarded a bus for museum #3 located in Onstmettingen. This museum, situated in an old school house, contains a large collection of scales given to a group of men who get together every Monday night for 4 hours to talk, learn, clean and repair scales. The second floor houses the balance and scientific scale collection of Hans Jenneman. Everyone marveled at the quantity and quality of his collection. The final stop was to a museum of scales, clocks and other antique objects.

Monday the sun peeked out from the clouds as we drove thorough the Black Forest. Arriving in Triberg, many of us walked down the 2 km path that goes along the waterfalls and into town. This is Germany's highest waterfalls. The town of Triberg is a charming town and home of the "Cuckoo" Clock. Continuing on we arrived at Mummelsee Lake and our opportunity to savor Black Forest Cake. Fog covered the beauty of the lake but "very delicious" described the piece of Black Forest Cake.

Tuesday we drove to the Pre-history Museum. Here we found a group of houses on stilts, recreated to look like it did during the Stone and Bronze Ages. In addition there were reproductions of artifacts from prehistoric times on display. Then it was back to the bus and on to Meersburg and Lake Constanze, Germany's largest lake. There was plenty of free time here to enjoy the lovely town, although the cold, damp weather prevented true enjoyment.

Wednesday we visited Martin Sauter's museum of German post WWII motorized vehicles. This is Martin's personal collection housed in an old clock factory. Lunch was at Villa Junghans, the former residence of a watch manufacture. A visit to Hohenzollern Castle atop an 855 meter high mountain provided us with a breathtaking panorama over the countryside. Inside the castle the halls and rooms have been recently furnished by Prince Louis Ferdinand of Prussia.

Thursday we bid farewell to Balingen and went to visit the private museum of Johannes Schlender. Superlatives are needed to describe the many scales and weights we oohed and awed over. In addition his wife has amassed wonderful collections of kitchen, sewing and handmade fabric items just to mention a few. But Rothenburg called and after another delicious German lunch we arrived in the medieval town for our guided tour. Rothenburg, a walled city, has history galore, some of which we learned from our local tour guide, who lives in a home that has been in his family for generations. And of course there was another beautiful church to see. The Farewell Dinner that evening meant that the trip was rapidly coming to an end.

But wait, Friday was the day to visit Reinhart Kremer's museum called the Pfunds. This museum houses probably the most comprehensive collection of scales, weights and measures that many of us have ever seen. Showcase after showcase displayed magnificent items all carefully categorized and organized on 3 floors. After that it was on to Frankfurt by bus allowing us time to reflect and remember the wonderful sights and sounds of Germany.

Dues Notice

Shirley Schmidt, our membership chair, reports that by now most of you should have received your dues notice for 2011. You may have noticed that starting this year, you have the option of paying your dues online via PayPal. We are very excited about this alternative, because it saves you time and postage and makes the dues collection process much easier for our Membership Chair and our Treasurer Kurt Beyreis by saving them lots of time and hassle.

We encourage everyone, whether paying by check or by PayPal, to pay their dues as soon as possible for the benefit of all.

Shirley would like to remind anyone who is paying by PayPal and pays by Dec 1, 2010, that you can enter your choice of the Bonus Perk in the message section on PayPal. If you prefer, you can email your choice along with any Directory updates to her at sasmidt@avci.net. You can expect to receive your Bonus Perk sometime soon after Dec 8, 2010.

To pay your dues online go to www.PayPal.com and pay to the account of usaisac@gmail.com and identify as 2011 dues in the message section. Thank you in advance to all who make this process a little easier and lighten the load on those who volunteer to take on this important and necessary task.

Publicity Committee

Many of you probably remember from the August newsletter, that Shirley Schmidt, at the urging of member Bob Foster, gave the *Farm Collector* three agriculture related scale articles from *EQM* to include in their publication over the next year. The first of these articles has just come out in their November 2010 issue. The article is on milk scales written by Les Firth. It is very professionally laid out with lots of pictures. At the end there is a short paragraph mentioning *Equilibrium* and ISASC with our website address. With a circulation of around 45,000 this is great exposure for our society.



Shirley urges everyone to get hold of a copy and take a look for themselves. *Farm Collector* is available on newsstands at most Tractor Supply Company stores, or by calling customer service at 866-624-9388, and online at www.FarmCollector.com.

We salute Bob Foster for coming up with this great idea, Shirley for following through on it and Jan Berning for forwarding the article and illustrations to the Editor. We encourage others of you to let us know if you have ideas for publicity and membership recruitment. In these times we are always looking for creative ways to get the word out about ISASC.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and encourage them to contact any of our members should they have questions.

Jim & Mary Ann Duvall
Susan Pompea

Pinellas Park, FL
Colorado Springs, CO

We wish you all a Happy Thanksgiving, a Wonderful Holiday Season and a Healthy and Successful New Year.

Until next time 'Keep on Scaling',

Regards,

Peter Laycock,
President ISASC